# COPIES

OF

# SEVERAL EXEMPLIFICATIONS

OF

# *PATENTS*,

PASSED IN GREAT-BRITAIN,

RELATIVE TO THE

# MACHINERY FOR SPINNING FLAX.

PUBLISHED BY ORDER OF THE RIGHT HON. AND HON.

**The Truſtees of the Linen Manufacture.**

DUBLIN.

1796.

1605/781.

# LINEN BOARD.

TUESDAY, 12th APRIL, 1796.

ORDERED,

That Copies of the ſeveral Exemplifications of the Patents, received from the Law Agent in England, relative to the Machinery for Spinning Flax, be printed and engraved under the Direction and Superintendance of Mr. EDWARD FITZ-GERALD, Engraver.

JAMES CORRY, SEC.

BRITISH MUSEUM 30 APR 70

# Nº. 1 – IOHN ROYDS.

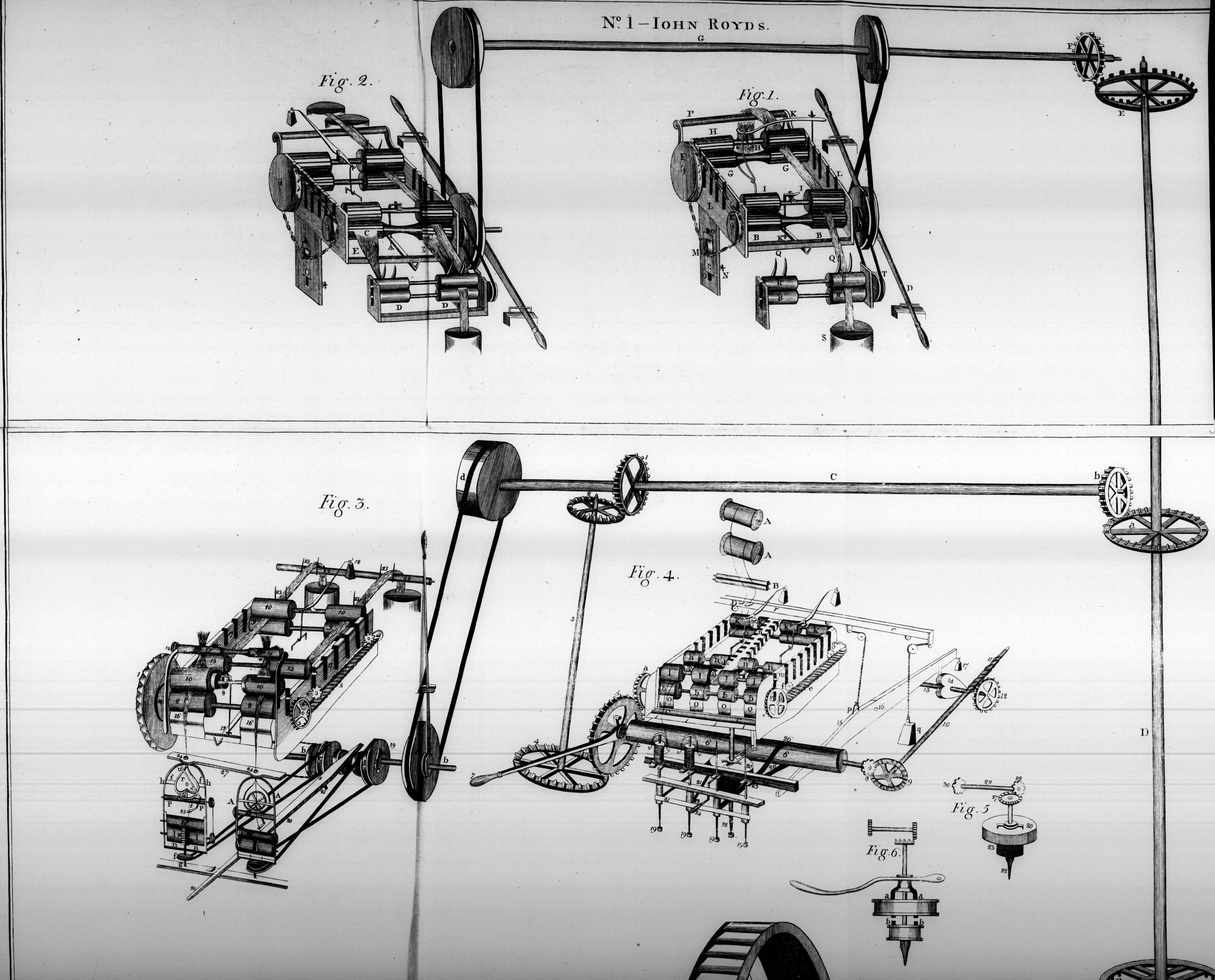


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

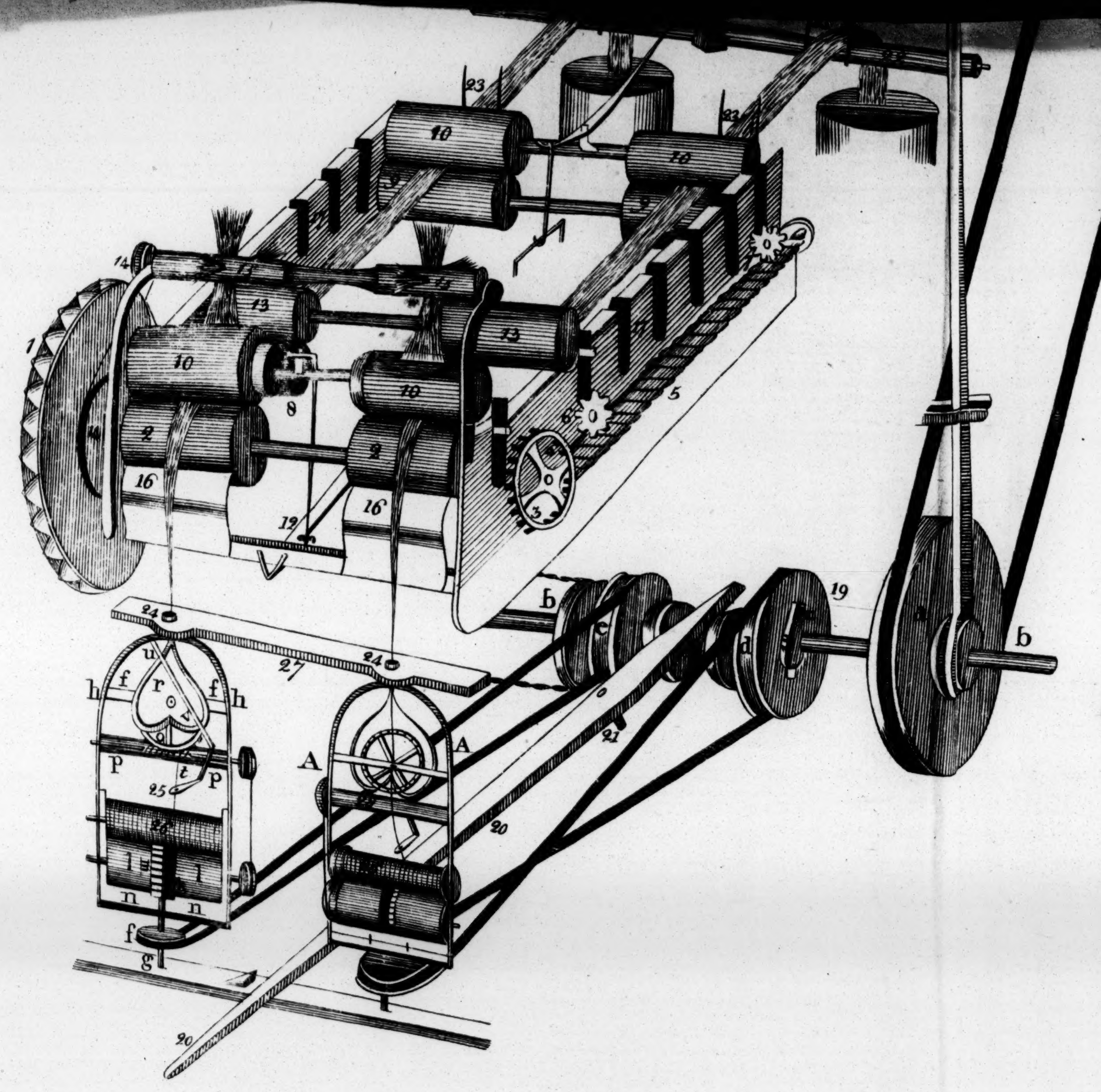
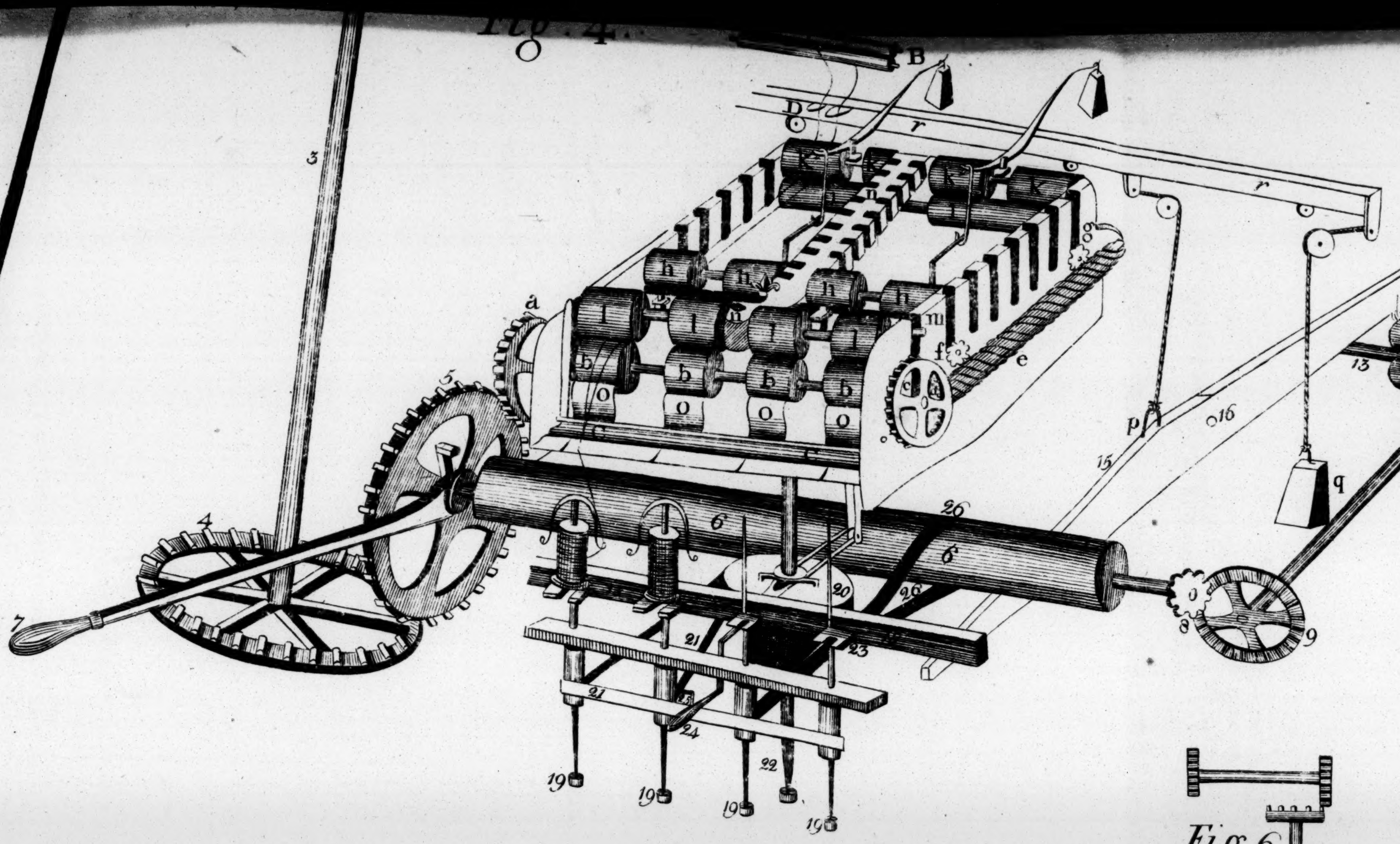
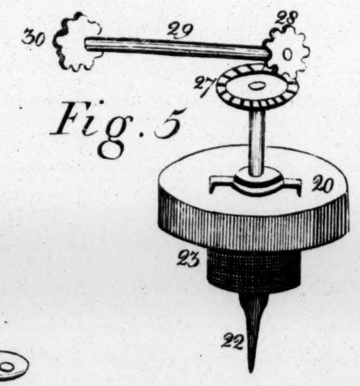


Fig. 4.





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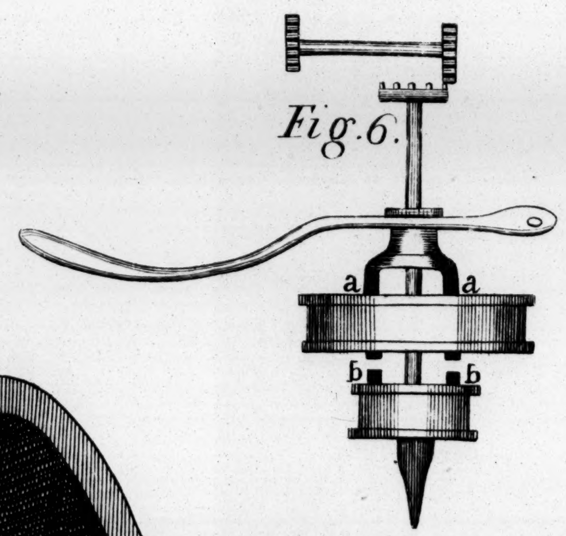
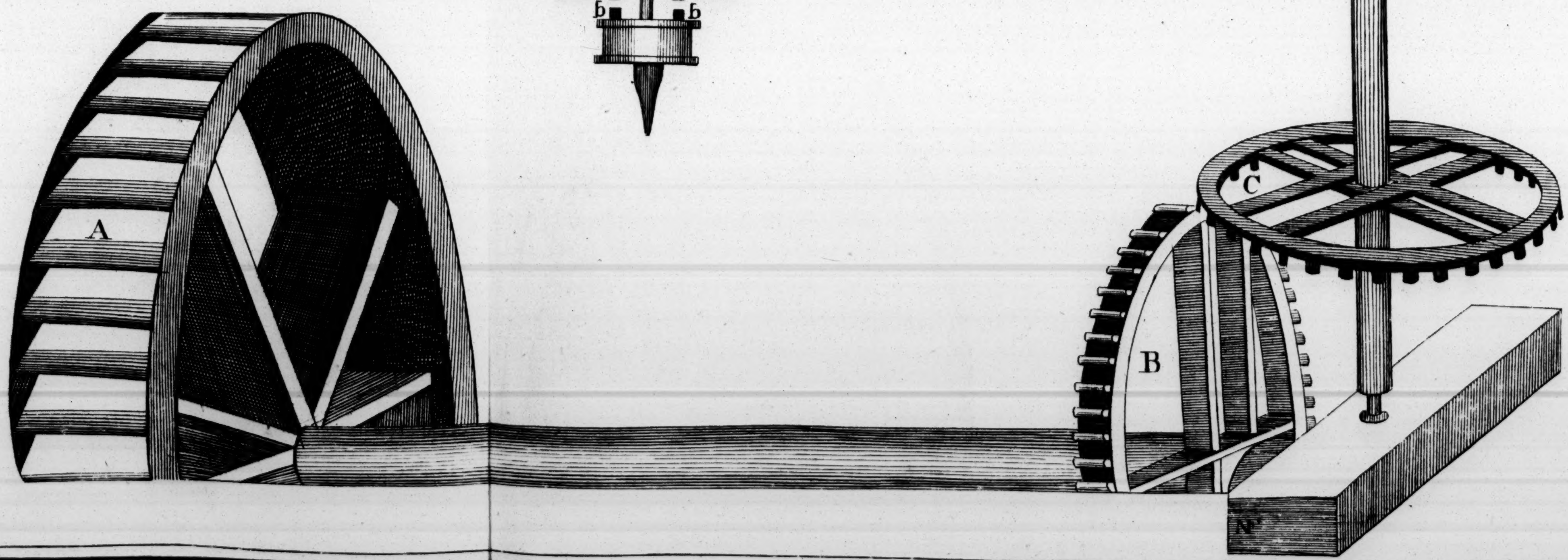


Fig. 6.



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# EXEMPLIFICATION.

## No. I.

## *JOHN ROYDS.*

TO all to whom theſe preſents ſhall come, I, JOHN ROYDS, of Falinge, in the pariſh of Rochdale, in the county of Lancaſter, Merchant, ſend greeting. Whereas his preſent Majeſty, King GEORGE the Third, hath, by his Royal Letters Patent, bearing date at Weſtminſter the eighteenth day of October laſt, been moſt graciouſly pleaſed to give and grant unto me, the ſaid John Royds, my executors, adminiſtrators, and aſſigns, his ſpecial licenſe, full power, ſole privilege, and authority, to make, uſe, exerciſe, and vend, for and during the term of fourteen years, within that part of Great Britain called England, his ſaid Majeſty's principality of Wales, and the town of Berwick upon Tweed, and alſo in his ſaid Majeſty's colonies and plantations abroad, my new invented Engines or Machines for the purpoſe of roving, ſlubbing, and ſpinning of Woollen, Worſted, and Linen Yarn, in a manner not heretofore uſed or practiſed, by means of which the roving, ſlubbing, and ſpinning, may be executed in a much better manner than by any other means hitherto diſcovered. In which ſaid Letters Patent is contained a proviſo, that I, the ſaid John Royds, ſhould particularly deſcribe and aſcertain the nature of my ſaid inventions, and in what manner the ſame is to be performed, by an inſtrument, in writing, under my hand and ſeal, and cauſe the ſame to be enrolled in his ſaid Majeſty's High Court of Chancery, within one calendar month next and immediately after the date of the ſaid Letters Patent, otherwiſe the ſaid Letters Patent, and all liberties and advantages thereby granted, ſhould utterly ceaſe, determine, and be void, as in and by the ſaid Letters Patent, reference being thereunto had, will more fully and at large appear. Now know ye, that in purſuance of the ſaid Letters Patent, and of the above mentioned proviſo therein contained, I, the ſaid John Royds, do hereby diſcloſe, diſcover, and deſcribe my ſaid inventions, by the plans or drawings hereunto annexed, and the deſcriptions thereof here under written, that is to ſay:

A is the water wheel. B a cog wheel, fixed on the water wheel ſhaft, which drives the wheel C, fixed on the upright ſhaft D, on the top of which ſhaft is fixed the wheel E, which drives the wheel F on the horizontal ſhaft G. On the ſhaft G is fixed the drum H, which by a ſtrap turns the drum A, *fig.* 1. The drum A is looſe on the axis of the rollers B B, when not in work. On the ſame axis of the rollers B B, is fixed the wheel C. The drum A has a catch, and the wheel C a pin, which are locked together by means of the lever D, to put them in work in the ſame manner as deſcribed at 18, 19, 21, (*fig.* 3.)—The drum A then turns the rollers B B. On the axis of the rollers B B is the wheel E, which turns by means of a chain the wheel F. On the ſame axis with the wheel F are the rollers G G. On the rollers B B, G G, are placed the rollers I I, H H, and are carried round with them, being preſſed on their ſurfaces by ſpring levers fixed by ſcrews at K K. L L are the ſides of the frame, with open grooves in which to place the axis of the rollers G G, H H, at a proper diſtance from the rollers I I, B B. The ſmall wheel M is for the purpoſe of regulating the chain on the wheels E F, according to the diſtance of the rollers B B from the rollers G G. The wheel M turns round on a pin fixed in a ſlide, which ſlide is raiſed or lowered in the grooves O O, and is made faſt by a ſcrew at N. The wool, or other material, paſſes over a looſe roller P, betwixt two pins, and betwixt the rollers G G, H H, and betwixt the rollers I I, B B, and through the forks Q Q, and betwixt the rollers R R R R, (which are looſely placed in an open groove) to the receiver S. The lower rollers R R are turned by a ſtrap which paſſes over the wheel T, fixed on the ſame axis, and over the wheel C, fixed on the axis of the rollers B B. The upper rollers R R are turned round by the under rollers R R.

*Fig.* 2, is worked by a ſtrap, which paſſes over the drum A, on the horizontal ſhaft G, and over the drum B, and is conſtructed in the ſame manner as *fig.* 1. except two ſcrapers C C, fixed in the bar D D, which reach the outward ſurface of the two rollers E E; this machine being for the purpoſe of paſſing at once two or more ſlubbings betwixt its rollers.

*Fig.* 3. *a*, a wheel fixed on the upright ſhaft D, turns the wheel *b*, fixed on the horizontal ſhaft C. On the ſhaft C is fixed the drum *d*, which turns by a ſtrap the wheel *a*, (*fig.* 3.) The wheel *a* is looſe on the axis *b b*, when out of work, and is put into and out of work by the lever *c*, as is hereafter deſcribed at 18, 19, 20 20, 21. The wheel *a* then carries round on the axis *b b* the wheels *d e*, which are faſt to each other. The wheel *e*, by a ſtrap, carries round the wheel *f*, which turns round on the upright axis *g*, which axis is made faſt in the wood frame of the machine. *h h* is an iron frame that reſteth on the wheel *f*, and is turned round on the fixed axis *g*, by means of the pins *n n* paſſing through its bottom, which pins are drove faſt into the wheel *f*. *k*, a ſmall pinion on the top of the upright axis *g*. *l l*, a cylinder with a vacancy in the middle, in which is fixed

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BRITISH MUSEUM 30 APR 70

the counteracting wheel *m*, which cylinder is turned round on its own axis, by means of the iron frame *h h*, carrying it, together with the wheel *m*, round the fixed pinion *k*. *i*, a pulley fixed on the axis of the cylinder *l l*, which by a ſtring turns the pulley *o*, which is fixed on the axis *p p*, on which axis *p p* is fixed a ſpiral ſcrew, that turns the wheel *q*. The heart wheel *r*, being faſt to the wheel *q*, turns round with it on a pin fixed in the bar *ſ ſ*.—*t* is a guider that hangs looſe on a pin at *u*, and is carried forward and backward by a pin fixed in the guider *t* at *v*, which ſlides in the groove of the heart wheel *r*. The cog wheel 1 is fixed on the axis of the rollers 2 2, and is turned by a chain which paſſes over a cog wheel that is fixed to the wheel *e*, upon the axis *b b*. On the axis of the rollers 2 2 is fixed the wheel 3, which drives the wheel 4. The wheel 4 is fixed on the axis of the ſpiral ſcrew 5. The ſcrew 5 turns the wheels 6 7, which are fixed on the axis of the rollers 8 8, 9 9. The rollers 10 10 10 10, are preſſed on the ſurfaces of the rollers 2 2, 9 9, by the weights and levers 12 12, and are turned round with them. The rollers 8 8 ſupport on their ſurfaces the rollers 13 13, which preſs on them with their own weight. The pulley 14 is fixed on the axis of the bruſh cylinder 15 15, and is turned round by a ſtring that goes round the wheel 14, that is fixed to the cog wheel 1. 16 16 are two ſcrapers on the ſurfaces of the rollers 2 2. 17 17 are the ſides of the frame, ſimilar to L L (*fig*. 1). 18 is a ferrule ſcrewed faſt to the axis *b b*, and carries round with it the wheels *d e*, by the catch or pin 19, when in work, and is put out of work by puſhing ſideways the lever 20 20, which turns on a pin at 21. The back ſide of the iron frame h h is ſhewn at A A. The wool or other material paſſes over the roller 22 22, and between the pins 23 23 23 23, and alſo paſſes between the rollers 10 10, 9 9, 13 13, 8 8, 10 10, 2 2, and likewiſe paſſes betwixt pins (placed in a ſimilar manner with thoſe at 23 23 23 23) behind the rollers 2 2, paſſing alſo through an open neck, in the top of the iron frame *h h* at 24 24, (the neck of the frame *h h* turning round in the bar 27 27) and through the eye of the guider *t* at 25, to the bobbins 26 26, which lying in open grooves in the iron frame *h h*, with liberty to riſe or fall, preſs with their own weight on the cylinder *l l*, and are likewiſe turned round thereby. 28 is a plate of tin for the roving to paſs over to the bobbin 26.

*Fig*. 4. 1, a wheel fixed on the horizontal ſhaft C, turns the wheel 2, on the upright ſhaft 3, on which is the wheel which drives the wheel 5. The wheel 5 is looſe on the horizontal roller ſhaft 6 6 when out of work, and is put into and out of work by the lever 7, as deſcribed at 18, 19, 20 20, 21 (*fig*. 3). On the axis of the ſhaft 6 6 is fixed a ſmall pinion 8, which turns the wheel 9, on the ſhaft 10. On the ſhaft 10 is fixed a ſpiral ſcrew 11, which drives the wheel 12, fixed on the ſhaft 13. On the ſhaft 13 is likewiſe fixed a heart wheel 14, which by its motion raiſes one end of the beam 15. The beam 15 being hung on a pin at 16, recovers its place by means of a weight at 17. The beam 15, by its motion, raiſes the bar 18 18, which returns again by its own weight. On the bar 18 18, reſt the bobbins on the ſpindles 19 19 19 19, which ſpindles are turned by the wheel 20, by the bands 21 21. The wheel 20 is fixed on the upright ſhaft 22; on the ſame ſhaft is likewiſe the wheel 23, which is looſe on the ſhaft when out of work, and is connected or not, at pleaſure, by the lever 24 being raiſed or fallen on the bearer 25, which locks or unlocks, as hereafter deſcribed in *fig.* 6. The wheel *a* is fixed on the axis of the rollers *b b b b*; on the ſame axis is likewiſe fixed the wheel *c*, which drives the wheel *d*. The wheel *d* is fixed on the axis of the ſpiral ſcrew *e*, which ſcrew drives the wheel *f g*. The wheel *f* is fixed on the axis of the under rollers, on whoſe ſurfaces the upper rollers *h h h h* are looſely laid, and turned round by them. The wheel *g* is fixed on the axis of the rollers *i i*. The rollers *k k k k*, *l l l l*, are preſſed on the ſurfaces of the rollers *i i*, *b b b b*, in the ſame manner as deſcribed at 12 12, (*fig.* 3), and are turned round by them, the rollers being all placed in open grooves in the frame *m m*, in which frame (and alſo in the frame 17 17, (*fig.* 3), and L L, (*fig.* 1), are other open grooves for the purpoſe of fixing the rollers at proper diſtances from each other. *n n* is a ſaddle with grooves, in which to place one end of the axis of each of the upper rollers. *o o o o* are ſcrapers on the ſurfaces of the rollers *b b b b*. A ſtring is faſtened to the beam 15 at *p*, which, by means of a weight at *q*, draws forward and backward the ſliding bar *r r*.

*Fig.* 5, ſhews the interior motions in *fig.* 4, in each of which figures the wheels 20 20 are the ſame, as are alſo the wheels 23 23, and likewiſe the upright ſhafts 22 22. The wheel 23, (*fig.* 4), is turned by the roller 6 6, by a ſtrap 26 26. The wheel 23, (*fig.* 5) when in work turns the upright ſhaft 22, on which is fixed the wheel 27, which turns the wheel 28, fixed on the ſhaft 29. On the ſhaft 29 is the wheel 30, which drives the wheel *a*, (*fig.* 4).

*Fig.* 6, ſhews the method of locking or unlocking the wheels 20, 23, (*fig.* 4), by the lever 24. The fork *a a*, (*fig.* 6), is looſe on the upright ſhaft 22, (*fig.* 4); the points of the fork paſs through the wheel 20. When the lever 24 is let down, the points of the fork *a a*, (*fig.* 6), are taken hold of by the catches *b b*, by which the wheel 20, (*fig.* 4), is carried round, and alſo the upright ſhaft 22. The lever 24 being raiſed, raiſes with it the fork *a a*, and detaches its points from the catches *b b*, which puts it out of work. The ſpinning is performed on the bobbins placed on the ſpindles 19 19 19 19, (*fig.* 4), by forming one thread, from two or more rovings, which rovings deſcend from one or more bobbins placed at A A, paſſing betwixt two looſe rollers at B, and alſo betwixt the rollers *k i*, and alſo betwixt the roller *h*, and its under roller, which is turned by the wheel *f*; and likewiſe betwixt the rollers *l b*, over the guider *c c*, to the bobbins placed on the ſpindles 19 19 19 19. The rovings are kept ſeparate from each other by iron pins, or ſome other ſubſtance, placed at D, or at any other convenient place betwixt the bobbins A A, and the rollers *l b*.

In witneſs whereof, I, the ſaid John Royds, have hereunto ſet my hand and ſeal, this ninth day of November, in the year of our Lord one thouſand ſeven hundred and eighty-ſix.

JOHN ROYDS. (L. S.)

*Signed, ſealed and delivered by the within named John Royds,*
*in the preſence of us, being firſt duly ſtamped,*

SIMEON LORD. EDMUND GREENWOOD.

AND BE IT REMEMBERED, That on the ninth day of November, in the year of our Lord 1786, the aforeſaid John Royds came before our ſaid Lord the King, in his Chancery, and acknowledged the ſpecification aforeſaid, and all and every thing therein contained, and ſpecified in form above written, and alſo the ſpecification aforeſaid was ſtampt according to the tenor of the ſtatutes made for that purpoſe. Inrolled the eleventh day of November, in the year of our Lord one thouſand ſeven hundred and eighty ſix.

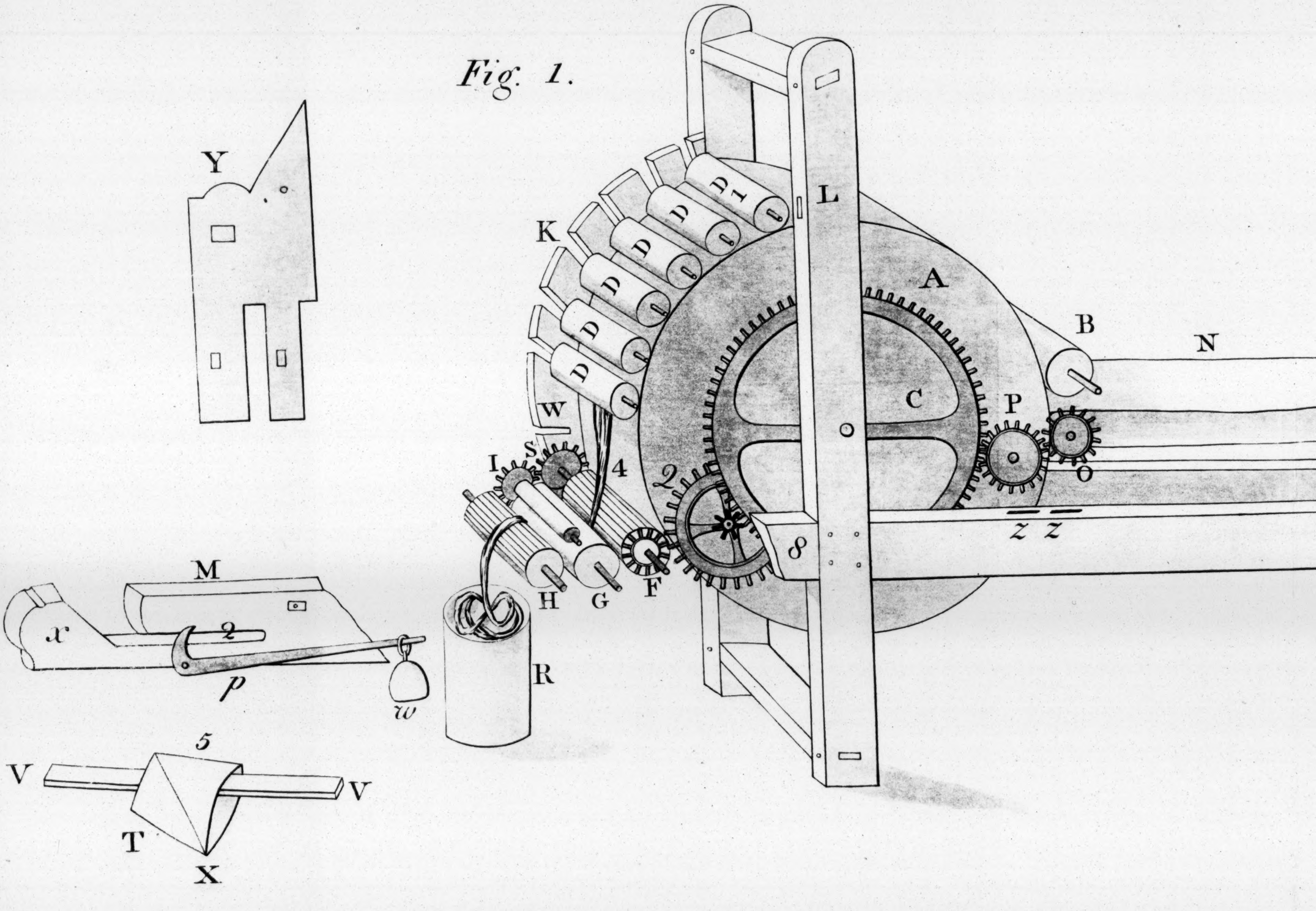
*This agrees with the record,*

JOHN MILFORD,
Deputy Clerk of the Inrolments in the
High Court of Chancery.

Page 9.

(N.º II, John

Fig. 1.



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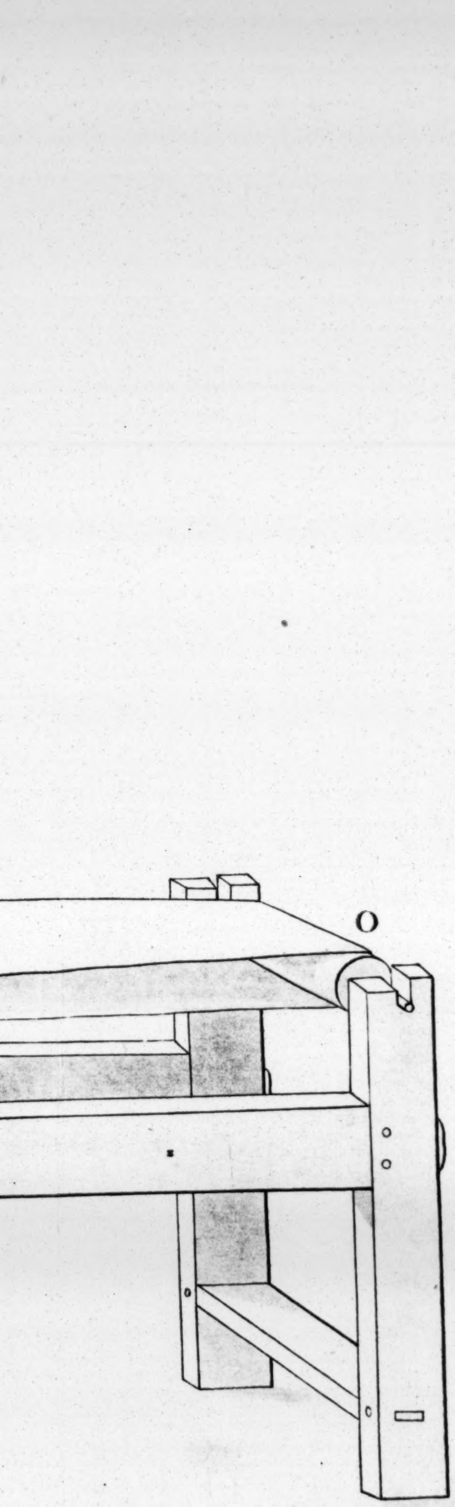


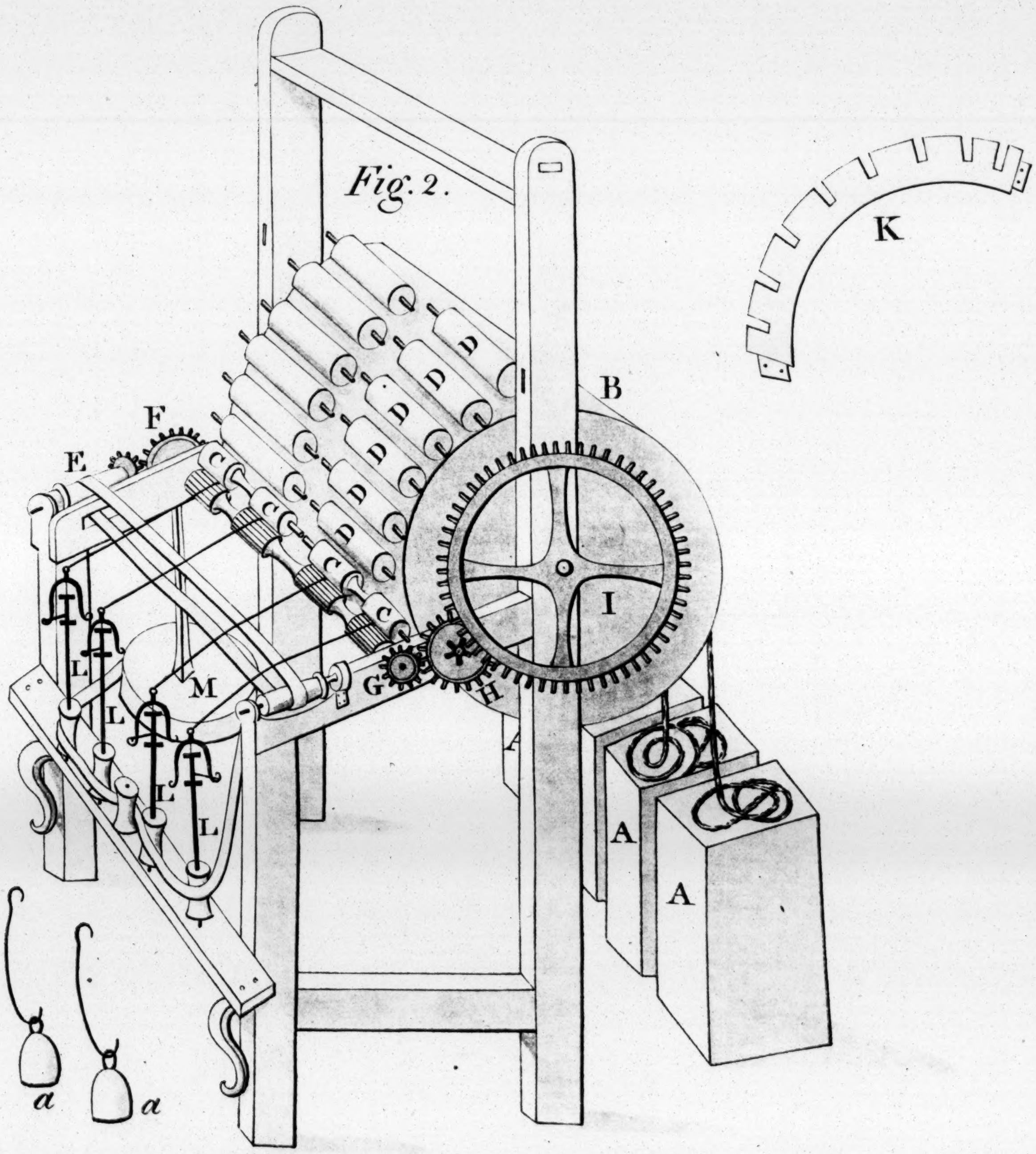


Fig. 2.

# EXEMPLIFICATION.

## No. II.

## *JOHN KENDREW* AND *THOMAS PORTHOUSE.*

TO all to whom theſe Preſents ſhall come, JOHN KENDREW, of Darlington, in the county of Durham, Optic Glaſs Grinder, and THOMAS PORTHOUSE, of the ſame place, Cloth Maker, ſeverally ſend greeting. Whereas the ſaid John Kendrew and Thomas Porthouſe did, by their petition, humbly repreſent unto his preſent Moſt Excellent Majeſty King GEORGE the Third, that they, the ſaid petitioners, had, by much ſtudy, labour, and expence, invented, and brought to perfection, a new mill, or machine, upon new principles, for ſpinning yarn from hemp, tow, flax, or wool, which they conceived would be of great public utility; and the ſaid petitioners therefore humbly prayed his ſaid Majeſty to grant unto them, the ſaid petitioners, their executors, adminiſtrators, and aſſigns, his Royal Letters Patent, under the Great Seal of Great Britain, for the ſole uſe, benefit, and advantage of their ſaid invention, within that part of his Majeſty's kingdom of Great Britain called England, his dominion of Wales, and town of Berwick upon Tweed, for the term of fourteen years, purſuant to the ſtatute in that caſe made and provided; and his ſaid Majeſty being willing to give encouragement to all arts and inventions which might be for the public good, was graciouſly pleaſed to condeſcend to the petitioners' requeſt, and did therefore, by his Royal Letters Patent, bearing date at Weſtminſter, the nineteenth day of June, in the twenty-ſeventh year of his reign, of his eſpecial grace, certain knowledge, and meer motion, for himſelf, his heirs, and ſucceſſors, give and grant unto the ſaid John Kendrew and Thomas Porthouſe, their executors, adminiſtrators, and aſſigns, his eſpecial licenſe, full power, ſole privilege and authority, that they, the ſaid John Kendrew and Thomas Porthouſe, their executors, adminiſtrators, and aſſigns, by themſelves or their deputy, or deputy's ſervants or agents, or ſuch others as they the ſaid John Kendrew and Thomas Porthouſe, their executors, adminiſtrators, or aſſigns, ſhall at any time agree with, and no others, from time to time, and at all times thereafter, during the term of years therein expreſſed, ſhould, and lawfully might make, uſe, exerciſe, and vend their ſaid invention within that part of his Majeſty's kingdom of Great Britain called England, his dominion of Wales, and town of Berwick upon Tweed, in ſuch manner as to them the ſaid John Kendrew and Thomas Porthouſe, their executors, adminiſtrators, and aſſigns, or any of them, ſhould in their diſcretions ſeem meet; and that they the ſaid John Kendrew and Thomas Porthouſe, their executors, adminiſtrators, and aſſigns, ſhould and lawfully might have and enjoy the whole profit, benefit, commodity and advantage from time to time coming, growing, accruing, and ariſing by reaſon of the ſaid invention, for and during the term of years therein mentioned, to have, hold, exerciſe, and enjoy the ſaid licenſe, powers, privileges, and advantages therein before granted, or mentioned to be granted unto the ſaid John Kendrew and Thomas Porthouſe, their executors, adminiſtrators, and aſſigns, for and during, and unto the full end and term of fourteen years from the date of the ſaid Letters Patent, next and immediately enſuing, and fully to be complete and ended, according to the ſtatute in ſuch caſe made and provided; in which ſaid Letters Patent is contained a proviſo, that if the ſaid John Kendrew and Thomas Porthouſe ſhould not particularly deſcribe and aſcertain the nature of their ſaid invention, and in what manner the ſame was to be performed, by an inſtrument in writing, under their hands and ſeals, and cauſe the ſame to be enrolled in his ſaid Majeſty's High Court of Chancery, within one calendar month next and immediately after the date of the ſaid Letters Patent, that then the ſaid Letters Patent, and all liberties and advantages whatſoever thereby granted, ſhould utterly ceaſe, determine, and become void, any thing therein before contained to the contrary thereof, in any wiſe notwithſtanding, as in and by the ſaid Letters Patent, reference being thereunto had, may more fully and at large appear.

Now know ye, that in compliance with the ſaid proviſo, they, the ſaid John Kendrew and Thomas Porthouſe, do hereby deſcribe and aſcertain the nature of the ſaid invention, and in what manner the ſame is to be performed, as follows, that is to ſay:—The machine may be worked or uſed by a water mill, horſe mill, or any other kind of mill, and is made and uſed, as hereafter deſcribed, in the two drawings or plans added hereto, and figured 1 and 2, and ſeverally marked. There is a cylinder, as marked A in the drawing, *figure* 1, three feet diameter, and ten inches broad, made of dry wood, or metal turned true, and covered on its circumference with ſmooth leather, upon which are placed the rollers marked D, covered with leather, and ſupported in their ſituations by the ſlits in the curved piece of wood marked K, in which the iron axis of the rollers turns, but ſuffers them to preſs on the wheel marked A. There muſt be another piece ſimilar to the above, to ſupport the other end of the rollers. Theſe rollers are of different weight; the upper weight, marked D 1, is two ſtone; the reſt decreaſing to the laſt, which is only two pounds weight and one half. There is an iron fluted roller marked F, furniſhed with a toothed wheel at each end, and a wood one marked G, covered with cloth, and over it a ſmooth leather.

There is an aſſiſting roller marked H, of fluted iron. Theſe rollers are ſupported by their axis turning in the ſlit marked 2, of the piece of wood marked M, which is here ſeparated from the end of the frame marked 8, to ſhew the rollers and wheel work. The rollers marked G and F are ſqueezed together by means of the lever marked *p*, and its weight marked *w*. The roller marked H is preſſed to the mark G, by its axis acting upon the inclined plan marked *x*. There is a rubbing roller covered with woollen cloth, and on its axis is a ſmall wheel marked I, driven by the wheel marked S. This roller reſts upon the roller marked G, and by its motion prevents any dirt or fibres from adhering to it. There is a cloth marked N, revolving over two rollers marked *o o*, which has motion given to it from the wheel marked C, by means of another wheel marked P. This cloth moves at the ſame pace as the ſurface of the wheel marked A. There is a ſupporter marked Y, of the axis of the wheels marked O P, but is removed in order to ſhew them it is fixed by its tenons in the mortiſes marked *z z*. The roller marked B is kept in action by its endeavour to ſlip down the inclined plane at the top of the piece marked Y, thereby preſſing againſt the revolving cylinder, and another piece ſimilar to this muſt be underſtood to ſupport the other end of the roller's axis. By the ſide of this revolving cloth is a table placed of the ſame length and breadth as the cloth is, to which belong two ſmooth cloths or leathers of the ſame ſize as the table. The machine being thus prepared, the attendant or workman muſt take a quantity of hemp, tow, flax, or wool, more or leſs, according to the fineneſs of the thread to be made, and lay or ſpread it evenly upon one of the ſmooth cloths on the table, then placed on the revolving cloth marked N. Motion being communicated to the roller marked F, by wheel work, as uſual from a water, horſe, or other kind of mill, which wheel work is communicated to the wheel marked Q, on whoſe axis is a nut which turns the wheel marked C, and thereby the cylinder marked A moves, and with it all the rollers, by which motion the hemp, tow, flax or wool is drawn forwards. The cloth turns down, but the hemp, tow, flax or wool, go upon the cylinder marked A, under the roller marked B, and ſo forward under all the rollers marked D, then falls in between the rollers marked G F, turns under the roller marked G, and over the roller marked H, which, as it gives the rollers hold of the hemp, tow, flax, or wool, in two places, enables them to drag forward the long fibres thereof, though many of them are to draw from under the marks 4 or 5 of the preſſing rollers marked D, it then falls into a caniſter marked R, and as by the wheel work the rollers marked F G H move three times faſter than the cloth and cylinder, the ſliver muſt be three times longer than when preſented. By the time this is drawing, the other cloth is filled with hemp, tow, flax, or wool, as before, and laid upon the revolving one, laying the hemp, tow, flax, or wool over the end of the other, which goes forward as before, and thus a continued ſliver is produced as long as the machine continues its motion; but in order that this ſliver may come out of the caniſter marked R, without entanglement, it muſt paſs through an inſtrument marked 5, placed over the rollers marked F G, its open ſide marked T, to the cylinder at mark 4, ſupported by its ends marked V V,

in

in the ſlits marked W, of the before deſcribed pieces marked K. The aperture marked X is ſo ſmall as to preſs the fibres cloſe to each other in their paſſage through it, previous to their paſſing the rollers, by which means they remain preſſed ſide by ſide in the ſliver, and will not entangle. Theſe thick ſlivers are drawn ſmaller by a ſimilar proceſs, and in the ſame manner as uſed for cotton, but the machines for drawing are all of the ſame ſtructure as the above, except that they have no revolving cloth. The ſlivers are applied to the cylinder under the roller marked B, which draws it forward under all the rollers as before deſcribed, drawing it out or lengthening it every freſh machine through which it paſſes, till it be ſmall enough for the ſpinning machine. It muſt be remarked, that the cylinders are made leſs in diameter according to the different ſmallneſs of the ſliver intended to be drawn upon it at the firſt; whilſt the ſliver is at its greateſt thickneſs, the cylinder is required to be three feet diameter, as above deſcribed, the next rather leſs, and ſo on to the laſt, which is only two feet. The aperture at the bottom of the contractor belonging to each machine is alſo made one third part ſmaller than another in ſucceſſion, from the greateſt to the ſmalleſt cylinder, as alſo the drawing rollers marked F G H are fartheſt from the preſſing roller marked D, in the largeſt cylinder, and neareſt, at the ſmalleſt cylinder. At the largeſt cylinder the diſtance is about nine inches, and the ſmalleſt about four inches, but their diſtance cannot in all caſes be fixed, as it depends on the different length of the fibres of the hemp, tow, flax, or wool, long requiring the diſtances mentioned, and ſhort ones requiring the diſtances much ſhorter than is here ſpecified.

The above ſeveral letters or marks are in the drawing figured 1. The following ſeveral letters or marks are in the machine figured 2. The ſpinning machine, as to its drawing principle, is the ſame as the drawing machine; the ſlivers are preſented to it in caniſters marked A, in the drawing figured 2, and drawn over a cylinder marked B, covered with rollers marked D. The fibres which are to form the thread are drawn from the cylinder by the rollers marked C, the under roller of which is made of fluted iron, the other of wood covered with leather; they move ſix or eight times faſter than the cylinder marked B, are enabled to draw the hemp, tow, flax, or wool forward from under the preſſing rollers marked D, by being ſqueezed together with the weights and crooks marked *a a*, hooked to the ſmall part of the rollers marked *c c*. There is a belt of ſmooth cloth marked E, moving on two rollers, which are turned by the wheel marked F, on the axis of the fluted roller, the oppoſite end of which, as at the mark G, is a nut which turns the wheel marked H, on whoſe axis is another nut turning the wheel marked I, and thereby the cylinder marked B, with all its rollers; theſe rollers move in curved pieces of wood or metal, marked K, which to prevent confuſion are not repreſented in their places; they have ſlits in them in which the rollers axis are guided, but ſo deep as at all times to ſuffer the rollers to preſs upon the cylinder. Theſe rollers are covered with cloth and leather. The top roller is about ten pounds weight, decreaſing to the ſixth roller, which is only about one pound weight. The yarn is twined by the ſpindles marked L, and rubbed over the wet cloth belt, if ſpinning linen yarn, but if ſpinning worſted yarn the belt muſt be removed, that it may not touch it as it paſſes to the ſpool, which it coils round as faſt as the rollers let it out. The ſpindles marked L are turned by a belt from the wheel marked M, which derives its motion from the mill, and by a wheel on its axis communicates it to the roller under the mark C, by the wheel marked E, and ſo to the reſt, as above deſcribed. The hemp, tow, flax, or wool, is twined in the ſame manner as cotton is by mills.

In witneſs whereof the ſaid John Kendrew and Thomas Porthouſe have hereunto ſet their hands and ſeals, the twenty-firſt day of June, in the year of our Lord one thouſand ſeven hundred and eighty ſeven.

JOHN KENDREW, (L. S.)
THOMAS PORTHOUSE, (L. S.)

*Signed and Sealed, (being firſt duly ſtamped)*
*in the preſence of*

BD. KIRKHAM, Symond's Inn.
JAMES LOWE, Southton Buildings.

AND BE IT REMEMBERED, That on the twenty-firſt day of June, in the twenty-ſeventh year of the reign of his Majeſty King George the Third, the ſaid John Kendrew and Thomas Porthouſe came before our ſaid Lord the King, in his Chancery, and acknowledged the inſtrument aforeſaid, and all and every thing therein contained and ſpecified in form above written; and alſo the inſtrument aforeſaid was ſtamped according to the tenor of the ſeveral ſtatutes made in the ſixth year of the reign of the late King and Queen William and Mary of England, and in the ſeventeenth and twenty-third years of the reign of his Majeſty King George the Third.

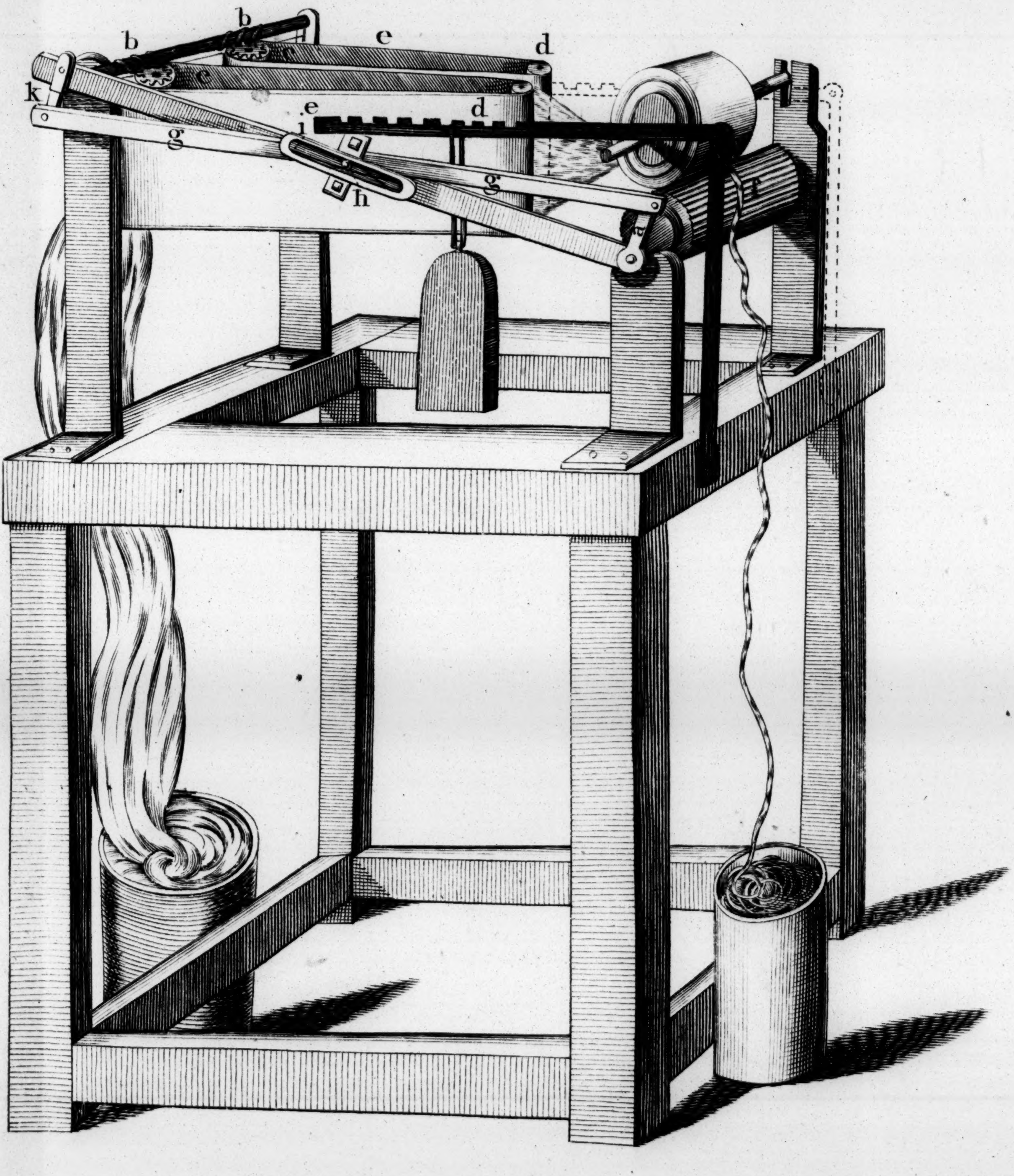
Inrolled the ſaid twenty-firſt day of June, in the year laſt above written.

*This is a true Copy from the original Record remaining in the Chapel of the Rolls, having been examined.*

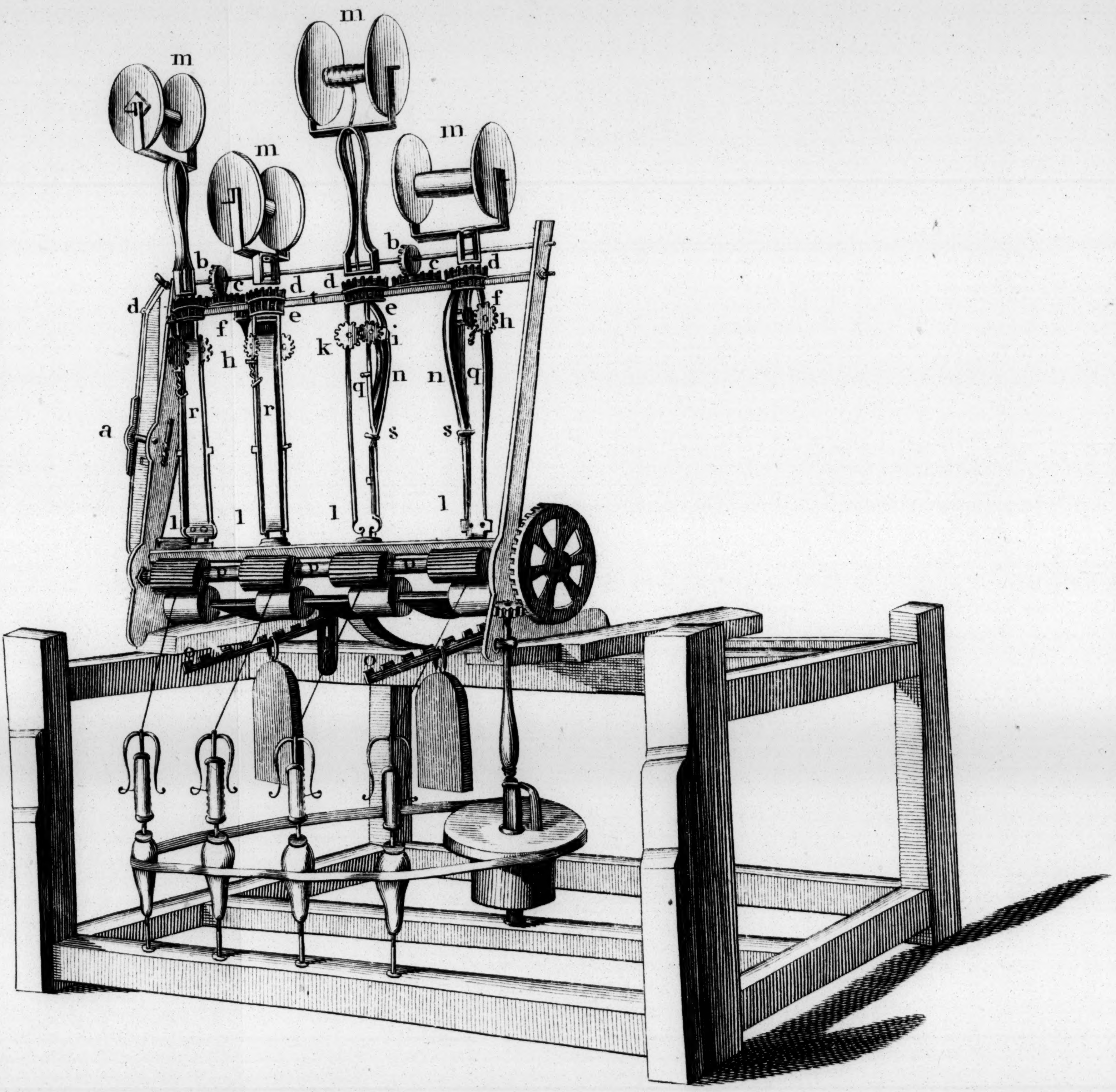
JOHN KIPLING.

Nº.III, Mathew Murr

## *Number 1.*



*Number 2.*



# EXEMPLIFICATION.

## No. III.

## *MATHEW MURRAY.*

KNOW ALL MEN by theſe Preſents, that I, MATHEW MURRAY, of Leeds, in the county of York, Whiteſmith, ſend greeting. WHEREAS his Moſt Excellent Majeſty King GEORGE the Third, by Letters Patent under the Great Seal of Great Britain, bearing date at Weſtminſter, the firſt day of June, in the thirtieth year of his reign, hath given and granted unto me the ſaid Mathew Murray, my executors, adminiſtrators, and aſſigns, his eſpecial licenſe, full power, ſole privilege and authority, that I, the ſaid Mathew Murray, my executors, adminiſtrators, and aſſigns, and every of them, by myſelf, themſelves, or by my and their deputy or deputies, ſervants or agents, or ſuch others as I, the ſaid Mathew Murray, my executors, adminiſtrators, or aſſigns, ſhould at any time agree with, and no others, from time to time, and at all times thereafter during the term of years therein expreſſed, ſhould, and lawfully might make, uſe, exerciſe and vend within that part of the kingdom of Great Britain called England, the dominion of Wales and town of Berwick, his invention of having brought to perfection a new machine, upon new principles, for ſpinning yarn from ſilk, cotton, hemp, tow, flax and wool; in which ſaid Letters Patent is contained a proviſo, that if I the ſaid Mathew Murray ſhould not particularly deſcribe and aſcertain the nature of my ſaid invention, and in what manner the ſame is to be performed, by an inſtrument in writing under my hand and ſeal, and cauſe the ſame to be inrolled in his Majeſty's High Court of Chancery, within one calendar month next and immediately after the date of the ſaid Letters Patent, that the ſaid Letters Patent, and all liberties and advantages whatſoever thereby granted, ſhould utterly ceaſe, determine, and become void, as in and by the ſaid in part recited Letters Patent, relation being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with, and agreeable to the true intent and meaning of the ſaid proviſo, in the ſaid Letters Patent contained, I, the ſaid Mathew Murray, do hereby declare that the nature of the ſaid invention, and the manner in which the ſame is to be performed, is and are deſcribed and aſcertained in manner following, that is to ſay:

The Machine is made and uſed as hereafter deſcribed in the two Drawings or Plans added hereto, numbered 1 and 2, and ſeverally marked. Number 1 is a drawing frame, in which *a* is a crank on the axis of the front roller *f*, which by the rod *g*, whoſe pivot *h* ſlides in the groove *i*, turns the crank *k* and gives motion to the axis on which the worms *b b* are fixed. The ſame motion may be equally well communicated by two or more wheels. The worms *b b* work a ſmall wheel on the axis of each of the rollers *c c*; round each of theſe rollers, and the rollers *d d*, revolves a leather ſtrap *e e*, which muſt be ſomething longer than the fibres of the material to be ſpun, and which muſt be of different breadths, according to the quantity of materials that is to paſs through them; thoſe for the firſt drawing frame are about ſix inches broad. The rollers *c c* and *d d* are preſſed together by four ſprings, which are fixed on two flat bars of iron, one above and the other below, in which the pivots of the rollers *c c* and *d d* run, which are not ſhewn in the plan to prevent confuſion. The rollers *d d* are wrapped round with woollen yarn or any ſoft ſubſtance, that they may not hold the ſliver ſo faſt but that it may draw freely from between them. The rollers *c c* and *d d* are perpendicular, and the rollers *f* are horizontal, conſequently at right angles to one another. By this poſition the ſliver is converged into a point between the rollers *f*, which muſt be on a level with the middle of the rollers *d d*, motion being given to the front rollers *f*, which are weighted, as uſual in ſpinning mills; the material to be ſpun is taken in a ſliver made by the card comb or hackel, and being introduced between the rollers *c c*, is carried forwards between the leather ſtraps *e e* through the rollers *d d*, and is drawn out by the front rollers *f* to a proper ſize. The roving and ſpinning frames, as to their drawing principles, are made as above deſcribed, except that in the ſpinning frame, for greater convenience, the back rollers and leather ſtraps are placed over the front rollers, as repreſented in the drawing numbered 2, and ſtanding at right angles with them, and are worked by a crank, worms and wheels, as already deſcribed in the drawing frame number 1. The other parts differ in nothing from the common ſpinning machinery.

For ſome materials, and particular kinds of yarn, the ſpinning frames may be made as deſcribed in the drawing numbered 2, in which *a* is a double crank, the ſame as before deſcribed in the drawing numbered 1, which communicates the motion from the roller *p* to the ſmall axis on which the wheels *b b* are fixed. The wheels *b b* work into ſmall wheels, (which cannot be ſhewn in the plan) which are fixed on a ſtud to the wheels *c c*; the ſtud wheels *c c* work into the wheels *d d d d*, and turn round the frames *q q*, in which the back rollers are fixed; *e* is a wheel fixed to the rail *t*, within the wheel *e*; the neck of the frame *q q* turns freely round the wheel *e*, the wheel *f* turns as the frame turns round, which by the ſmall upright ſhaft and worm *h* gives motion to a wheel on the end of a ſmall roller. On the other end of the roller is a wheel *i* working into another wheel of equal number on another roller *k*. Round each roller revolves a ſmall leather ſtrap *r*, which paſs round two ſmall rollers *l l*, which are fixed at the bottom of the frame *q*, and cannot be ſhewn in the plan; the roving bobbins *m* are ſupported by forks fixed to the neck of the frame *q*, and turn round along with it; *n* is a ſpring which preſſes together the back rollers *i* and *k*, the end of it being held down by a loop *s* about the middle of the frame *q*; *o* is a weighted lever which preſſes together the front rollers *p*. Motion being given to the ſpindles and roller *p*, as uſual in ſpinning mills, the roving is introduced through the neck of the frame *q*, through which there is a perforation for that purpoſe between the back rollers *i* and *k*, and being carried forwards between the leather ſtraps *r*, and rollers *l*, is drawn out by the roller *p*, to a proper ſize for the intended thread, and twiſted into a thread by the ſpindle, as uſual. The back rollers turning round at the ſame time that the ſliver is drawing out, give it one twiſt in an inch (but may be varied by the number of cogs in the wheel work above, according to the different materials to be ſpun) by which means the fibres are compleatly contracted, and made ready to be twiſted into a thread. The above deſcribed machines may be worked or uſed by a water mill, horſe mill, or any other kind of mill, or by hand.

In witneſs whereof, I, the ſaid Mathew Murray, have hereunto ſet my hand and ſeal, this twenty-ſecond day of June, in the year of our Lord one thouſand ſeven hundred and ninety.

MATHEW MURRAY, (L. S.)

*Signed and Sealed, (being firſt duly ſtamped)*
*in the preſence of*

WILLIAM FENTON, of Leeds, in the county of York, attorney at law.
SAMUEL WESTERMAN, of Leeds aforeſaid, wholeſale linen-draper.

AND BE IT REMEMBERED, That on the twenty-ſecond day of June, in the thirtieth year of the reign of his Majeſty King George the Third, the ſaid Mathew Murray came before our ſaid Lord the King, in his Chancery, and acknowledged the inſtrument aforeſaid, and all and every thing therein contained and ſpecified in form above written; and alſo the inſtrument aforeſaid was ſtamped, according to the tenor of the ſeveral ſtatutes made in the ſixth year of the reign of the late King and Queen William and Mary of England, &c. and in the ſeventeenth and twenty-third years of the reign of his Majeſty King George the Third.

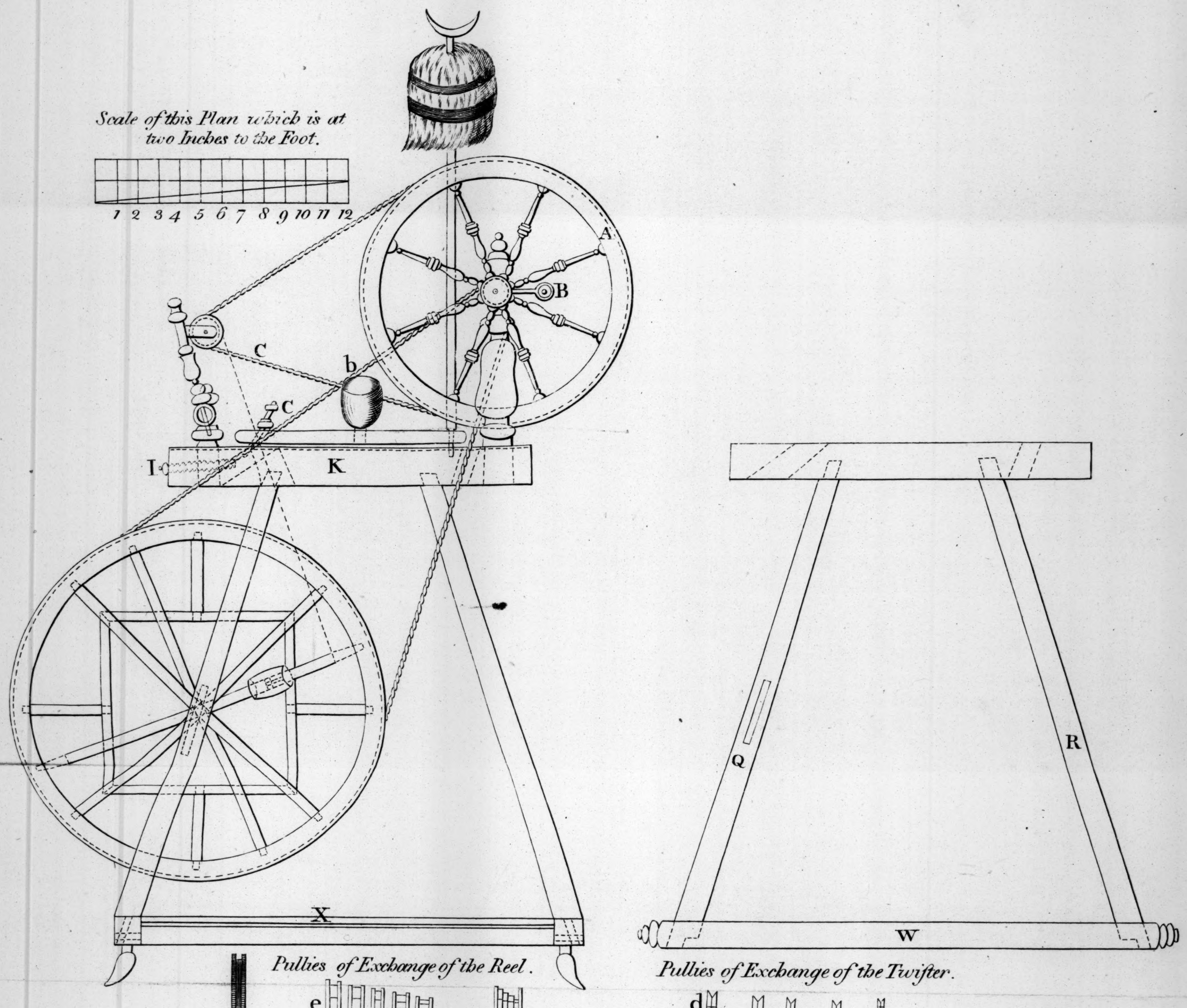
Inrolled the twenty-eighth day of June, in the year above mentioned.

THOMAS AKEROYD, a Maſter extra, &c.

*Examined with the Record in the Office of Petty Bag, in the Court of Chancery, this 5th day of January,* 1796.

P. PARRY.

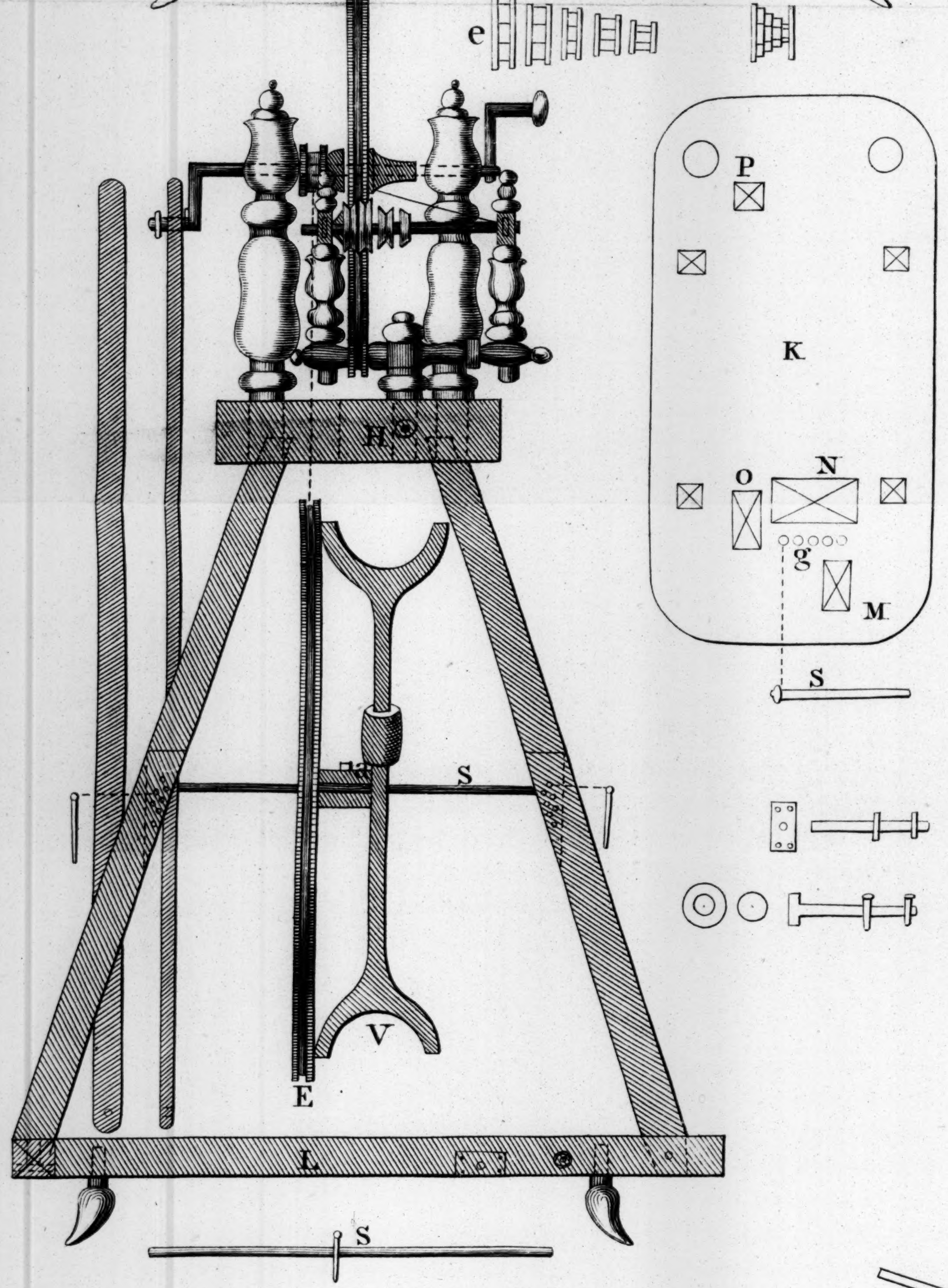
## No. IV, Jean Arnoux.



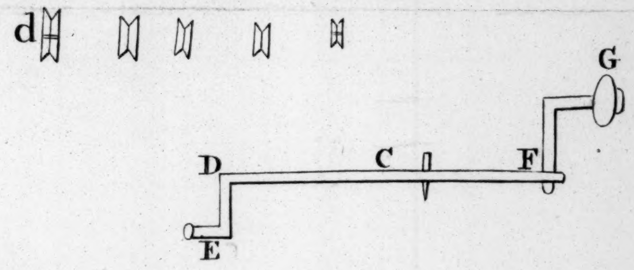
Pullies of Exchange of the Reel.

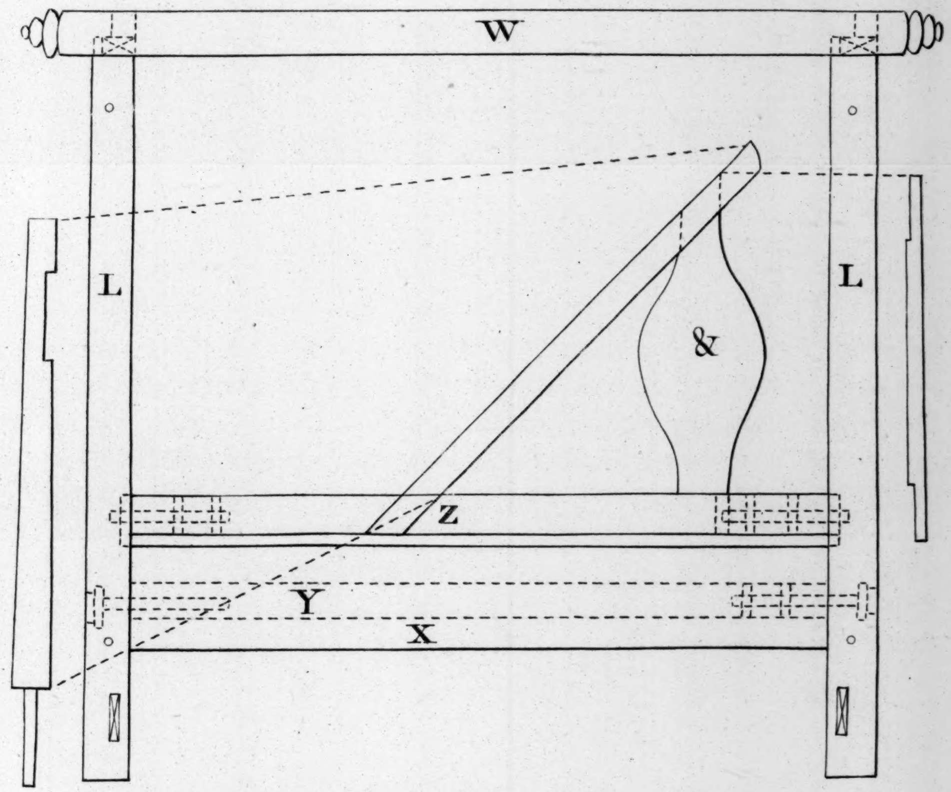
Pullies of Exchange of the Twister.

*Pullies of Exchange of the Reel.*

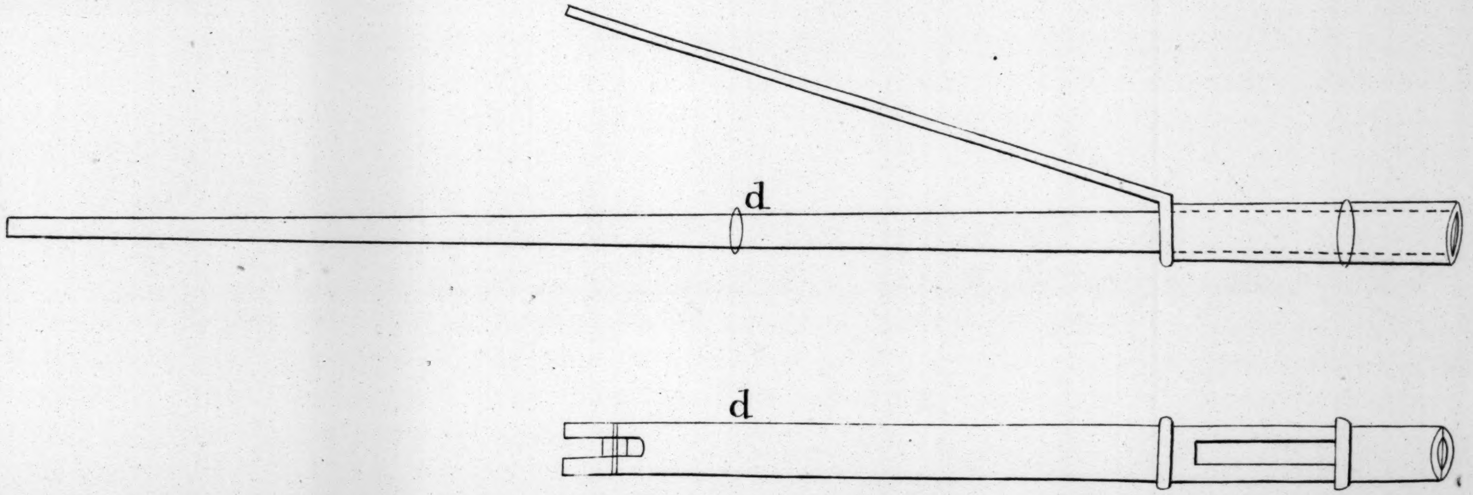


*Pullies of Exchange of the Twister.*





*Twiſter deſigned according to the Execution proper for the real ſervice of the Machine.*



# EXEMPLIFICATION.

## No. IV.

## *JEAN ARNOUX.*

TO all to whom theſe preſents ſhall come, I, **JEAN ARNOUX**, of the pariſh of Saint James, Weſtminſter, in the county of Middleſex, Doctor of Phyſic and Occuliſt, ſend greeting. Whereas his Moſt Excellent Majeſty King **GEORGE** the Third, did, by his Letters Patent, under the Great Seal of Great Britain, bearing date at Weſtminſter, the twenty-eighth day of May, in the thirty-firſt year of his reign, give and grant unto me the ſaid Jean Arnoux, his eſpecial licence that I, the ſaid Jean Arnoux, during the term of years therein mentioned, ſhould, and lawfully might uſe, exerciſe, and vend, within England, Wales, and the town of Berwick upon Tweed, my invention of a Spinning Wheel, upon an entire new conſtruction, for the purpoſe of ſpinning, and at the ſame time reeling or winding of flax, hemp, rope yarn, and other articles, to any ſize or dimenſions required, from the ſmalleſt thread to the largeſt rope or cable. In which ſaid Letters Patent there is contained a proviſo, obliging me, the ſaid Jean Arnoux, under my hand and ſeal, to cauſe a particular deſcription of the nature of my ſaid invention, and in what manner the ſame is to be performed, to be inrolled in his Majeſty's High Court of Chancery, within one calendar month after the date of the ſaid recited Letters Patent, as in and by the ſame (relation being thereunto had) may more fully and at large appear.

Now know ye, that in compliance with the ſaid proviſo, I, the ſaid Jean Arnoux, do hereby declare that my ſaid invention of a Spinning Wheel, upon an entire new conſtruction, is deſcribed in the plan and deſcription thereof hereunto annexed.

In witneſs whereof, I, the ſaid Jean Arnoux, have hereunto ſet my hand and ſeal, this twenty-eighth day of June, in the year of our Lord one thouſand ſeven hundred and ninety-one.

J. ARNOUX, (L. S.)

AND BE IT REMEMBERED, That on the ſame twenty-eighth day of June, in the year above written, the aforeſaid Jean Arnoux came before our Lord the King in his Chancery, and acknowledged the ſpecification aforeſaid, and all and every thing therein contained, in form above written, (through the interpretation of Mary Anne Turner, who was firſt duly ſworn that ſhe had duly interpreted the contents of the ſpecification above written, and the deſcription of the plan hereunto annexed, and that ſhe would truly interpret the words of the ſaid acknowledgment to the ſaid Jean Arnoux;) and alſo the ſpecification aforeſaid was ſtamped according to the tenor of the ſtatute in that caſe made and provided.

Inrolled the ſame twenty-eighth day of June, in the year above mentioned.

*Examined with the Record in the Office of Petty Bag, in the Court of Chancery, this 5th day of January,* 1796.

A. POPHAM. F. PARRY.

## Deſcription of a Wheel for Spinning and Winding, invented by JEAN ARNOUX, Phyſician and Occuliſt, of London.

A, principal wheel, compoſed of a horizontal beam in its centre, being at one end three quarters of an inch in diameter; at one inch and a quarter's diſtance from this end, its diameter is one inch and a quarter. The cylindrical length of this part is one inch; from this part to the other end, half an inch; its diameter is eleven twelfths; the total length, then, of this beam, is two inches and three quarters. In the middle of the largeſt cylindrical part of the beam of this wheel are fixed eight ſpokes, each five inches long, having at each end a cylindrical tenon, one quarter of an inch in length, one end of which are faſtened into the nave, and the other into the interior rim of the wheel, and to the depth of the length of their tenons. Theſe ſpokes will be placed according to the deſign of the plan. The ſize of the rim of the wheel is ten twelfths; the thickneſs is ſeven. Round the rim is an angular channel, terminated between the two angles by a ſmall circular portion, the height of which in the center is of half a line, the depth of the channel is the ſixth part of an inch, beſides the lead-work. B, handle, which is in the center of the beam of the wheel marked A A, and in the center of the little pulley of the reel, which is an inch and a half in diameter, from outſide to outſide, and one inch and one ſixth in thickneſs; its channel is a quarter of an inch in depth, and five twelfths in width. This handle is of ſteel, and is three lines in diameter in all parts of its length; its C axis is nine inches and a half in length; at the end of this axis there is room for a ſcrew half an inch in length; its D arm is an inch and five-ſixths in length, from one outſide to the other; its E lever is one inch in length, including the button, which is half an inch in diameter, and a quarter of an inch in thickneſs. The ſecond arm F of the handle is two inches and a half long; at the end of this arm is a worm, deſtined to receive the part which contains the ſcrew of the axis. The hand G is two inches and a half long, the nut of the hand is two inches in diameter. Wooden ſupporters, one foot in length, in their largeſt profile, and one inch three quarters in diameter, having each a cylindrical tenon, one inch and three quarters in length, and one inch in diameter; at two inches diſtance from the top of the ſupporters is a hole horizontally placed to receive the axis; theſe ſupporters are to be executed according to the profile of their dimenſions taken on the ſcale of the plan. H, double tenon, in wood of the fork, which moves backwards and forwards by means of a ſcrew. The inferior tenon at one inch and three-fourths in length, and nine lines in thickneſs, and five-ſixths in width, containing a worm of ſeven-twelfths of diameter for the reception of a ſcrew I, nearly the ſame diameter, from one outſide to the other, and three inches long; the head is two-thirds of an inch in thickneſs. Above this tenon are two larger parts, the firſt at one inch and one-ſixth in diameter, and its length is of five-twelfths; the ſecond part is one inch and a half in diameter, and five-twelfths long; after is the ſecond cylindrical tenon, which is an inch in length, and two thirds of an inch in diameter; after this tenon is a ſcrew, which is of the ſame diameter, and ſeven-twelfths in length; this tenon is ſcrewed in its nut half an inch in length, and one inch and a half in diameter from outſide to outſide. The ſecond tenon paſſes acroſs a hole equal to its diameter, which is made in the middle of the length of the croſs-piece. This croſs-piece is eight inches and a quarter in length, and in the middle a part an inch ſquare; on each ſide of the ſquare, at the diſtance of three inches one-ſixth from its centre, is a hole pierced parallel to the other, of half an inch of diameter; on the other ſide, at the diſtance of two inches and a half from the center of the ſame ſquare is a hole reſembling the other; their circular parts have each eleven-twelfths in diameter, and in each hole are placed a piece ſix inches and a half long, and in their largeſt part they are one inch in diameter; their cylindrical tenons are one inch and a quarter long, at three inches and a quarter diſtance; their tenons have each a cylindrical part, one inch and a quarter long, and of ſeven-twelfths of diameter; in the middle of the length of each of thoſe parts is a mortiſe, two-thirds of an inch in length, and one half in width;

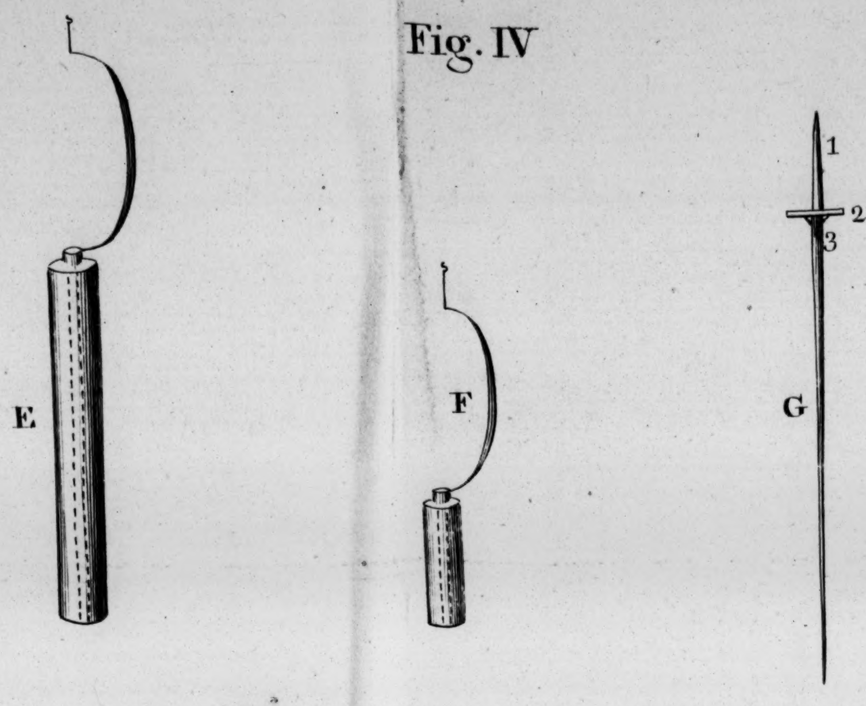
in each of thoſe mortiſes are annexed two pieces of leather, one inch and three-quarters long, and two-thirds of an inch wide, and one line in thickneſs; one leather has a hole a quarter of an inch in diameter, and the other one line at one inch and a quarter in length. In the hole of the leather turns the little pipe of the twiſter in copper, which is a quarter of an inch in diameter, and one inch and a quarter in length; the hole of the pipe is an inch and one-eighth in diameter; at one third of an inch diſtance from the extremity of the pipe is a ferril one-half a line in width, and a quarter of a line in thickneſs; at one-twelfth diſtance from the ferril is an opening of five lines in length, and one-eighth in breadth; at a quarter of an inch diſtance from this opening is a piece of copper three inches and a quarter in length, ſoldered to the rim in a manner ſo as to form an angle ſixteen degrees on the right line, which gives the beam; this piece is half a line in thickneſs, and a quarter of an inch in width; at one-third of an inch diſtance from the end is a fork, one-eighth of an inch in width, and at the bottom of the opening is a little copper pulley, one-eighth of an inch in diameter, and one-eighth in thickneſs; its angular channel is one-half a one-eighth in width, and one-fourth of a one-eighth in depth, containing a hole with a one-fourth of a line in diameter, at the proper diſtance to receive the ſteel peg, and that it may be perfectly exact and moveable in its fork. After the piece which forms the angle is ſoldered, a beam of copper towened to its diameter on a length of five inches and a quarter, one-eighth of an inch in diameter; the end that is ſoldered is two-twelfths of an inch in diameter, and one-twelfth of an inch at the ſmall end. To this beam is a moveable pipe of one inch and a quarter in length, having at one end a pulley one inch and ſeven-twelfths in diameter from one extremity to the other, and one inch and a quarter in diameter at the bottom of the angular channel of the pulley, which is one-third of an inch in thickneſs; at the ſide of this pulley, at two lines of diſtance, is another pulley of the ſame diameter on the outſide, and of one inch and one-twelfth of diameter at the bottom of the channel. Dimenſions of the table K of the wheel, eight inches and three-fourths in width, and ſeventeen inches in length, and one inch and three-fourths in thickneſs; four mortiſes, placed quadrangularly, their exterior diſtance on one ſide is four inches and a half, and on the other ſide ten lines; the great diſtance from one to the other is ſix inches and a half, and their ſquare is of eight lines.—The mortiſe M is bored perpendicularly in the table, at one inch diſtance from the end; the other ſide of this mortiſe is at two inches and ſeven-twelfths diſtance from the ſide of the table; this mortiſe is one inch and a half in length, and five-ſixths in width.—Mortiſe N is bored obliquely in the table, on a ſloping angle one hundred and fourteen degrees, at one foot four inches and a half diſtance from the end; its ſloping is oppoſite this diſtance; the other ſide of this mortiſe is at two inches and a quarter diſtance from the ſide of the table. This mortiſe is three inches long and one inch five-twelfths in width.—Mortiſe O, bored through the table on a ſloping angle of thirty-five degrees, at three inches diſtance from the end; its ſlope is oppoſite this diſtance; the other ſide of this mortiſe is at two inches and a half diſtance from the ſide of the table; the mortiſe is two inches long, and three-fourths of an inch wide, on a ſloping angle of ſeventy-two degrees.—Mortiſe P, pierced in the table at eight inches and three-fourths diſtance from the other; its ſlope is oppoſite this diſtance; the other ſide is at two inches and a half diſtance from the ſide of the table. This mortiſe is three-fourths of an inch ſquare, two round holes an inch in diameter, pierced in the table at an equal diſtance from its ſides, at four inches and a half from each other, and at one inch and three-fourths from the end of the table. The four legs, two deſigned by Q, and two by R, being each two feet ſix lines long, one inch and a quarter ſquare, each end being an inch ſquare; theſe legs have a tenon at each end, the tenons of the ſmall end are of eight ſquare lines and ſeven-eighths in length; the tenons of the longer end of two of theſe legs are one inch and a quarter in length, each cut in half, with the reſerve of three-fourths of an inch on the length of each tenon; their thickneſs is a quarter of an inch, and their width one inch and a quarter; the other two tenons are formed in the figure of the trapezium, of which the great width is an inch and a quarter, and the inferior three-fourths of an inch in width, two inches long and a quarter of an inch in thickneſs; an angular mortiſe, placed at ten inches and a half diſtance from the ſmall end, is an angular channel, one ſide of which is three inches and a quarter long, and the other ſide one inch in length, bored at each leg Q at the oppoſite ſide, one to the other being a quarter of an inch in thickneſs; on each ſide of thoſe two mortiſes are ſeven holes, one-eighth of an inch in diameter, with a ſmall peg of the ſame diameter. The two legs deſigned by Q, have an iron beam deſigned by S, one foot ſix lines in length, and a quarter of an inch in diameter; at five inches and three-fourths diſtance from one end is a ſmall hole deſtined to receive the iron peg, one inch and a half long, and half a line in diameter; this beam paſſes acroſs the little beam of wood, one inch ſquare, and two inches and a half in length; the little iron peg paſſes acroſs the middle of its length, and croſſes alſo the iron beam; this beam hooks at each end the thickneſs of the croſs of the pulley T, and the reel V, quadrangularly glued; each branch of the croſs of the pulley is half an inch ſquare, and ſixteen inches and three-fourths long, with a tenon at each end half an inch long, two-twelfths in thickneſs, and half an inch wide; to this croſs is faſtened four pieces and mortiſes; theſe four croſs pieces are each nine inches two-twelfths in length; each croſs piece has a bracket faſtened in the middle with a tenon half an inch wide, and two lines in thickneſs; the tenon of the croſs, and thoſe of the bracket are equally faſtened in the rim of the wheel, which is ſeventeen inches and three-fourths in diameter, and one inch in width, and ſix lines in thickneſs; the pulley has a channel one-third of an inch in depth, and two-twelfths in width; the croſs of the reel has thirteen inches and three-fourths in diameter, and half an inch ſquare, the creſcent being a half circle three inches and a half in diameter, and half an inch ſquare; each center of the half circle is enlarged a quarter of an inch. W, croſs ſupporters of the legs, deſigned by the letters Q and R, that of the back of the wheel is two feet one inch and a half long, one inch and a quarter ſquare; on each ſide of the middle of this croſs piece W, nine inches eleven-twenty-fourths diſtance, is a mortiſe one inch and a quarter long, and one-third of an inch wide; the croſs pieces L of the ſides are one foot nine inches and two-thirds long, having a tenon at one, and a mortiſe at the other; the tenon is one inch and a quarter long, one inch and a quarter wide, and a quarter in thickneſs; this tenon is cut in half in its width, and is three-fourths of an inch in its length. At the diſtance of two inches and three-fourths from the end of the tenon of this croſs piece is a hole bored perpendicularly, ſix lines in diameter; at the other end, at three inches and three-fourths diſtance, is another hole like the former; at one inch one-twelfth from the end is a mortiſe one inch and a quarter long, and a quarter of an inch in width; at four inches five-ſixths from the end on the other ſide is a hole, one-third of an inch in diameter, pierced through at five twelfths of an inch diſtance from the angle of its ſquare; this hole has a forelock of copper, of two-twelfths thickneſs, and at two-twelfths depth in the wood; this forelock has a hole of the ſame diameter from one outſide to the other, and is three-fourths of an inch; at two inches diſtance from the hole of the croſs is another hole of one-third of an inch in diameter, being on the ſame line, having a plate of copper one inch and a half in width, and two-twelfths in thickneſs, having four holes to ſcrew it to the wood, and cut to its thickneſs; the other croſs piece is perfectly alike; between the two croſs pieces is a moveable foot board X, being one foot ſeven inches long, and three inches wide, and half an inch in thickneſs, faſtened on a beam Y, one inch ſquare, with a hole in the center of each, two inches and a half in length, and one-third of an inch in diameter, and four inches long; annexed to this beam are two ſcrews, which paſs acroſs the foot board, the beam and the peg; at one-third of an inch diſtance from the foot board is a beam Z, having at each end a hole two inches and a half long, and one-third of an inch in diameter, to receive at each end a trunion of ſteel, three inches five-twelfths long; the diameter of the ſmall end is a quarter of an inch; to this beam is fixed a pedal &, nine inches long, ſupported by a bracket; at one inch diſtance from the end of the pedal is a hole, in which paſſes a ſtring, which alſo paſſes through the hole of the ſtring of the pedal, being two feet five inches and a half long, three-fourths of an inch wide, half an inch in thickneſs; at three-fourths of an inch from the end is a hole one-third of an inch in diameter; at the other, at an inch diſtance, is a mortiſe, deſtined to receive the nut of the lever of the handle; the pulley of the twiſter *d* may either be uſed or not.

*a*, diſtaff; C, cupee cords; D, twiſter; E, pullies of exchange; *f*, peg of diſtribution; *g*, holes of diſtribution of the reel.

When it is neceſſary to give a particular degree of twiſt to the thread or rope yarn, it muſt be done by means of the pullies of exchange, which, according to their diameter, gives a greater or leſs degree of twiſt.

The double letters muſt anſwer to the ſame piece.

Fig. IV



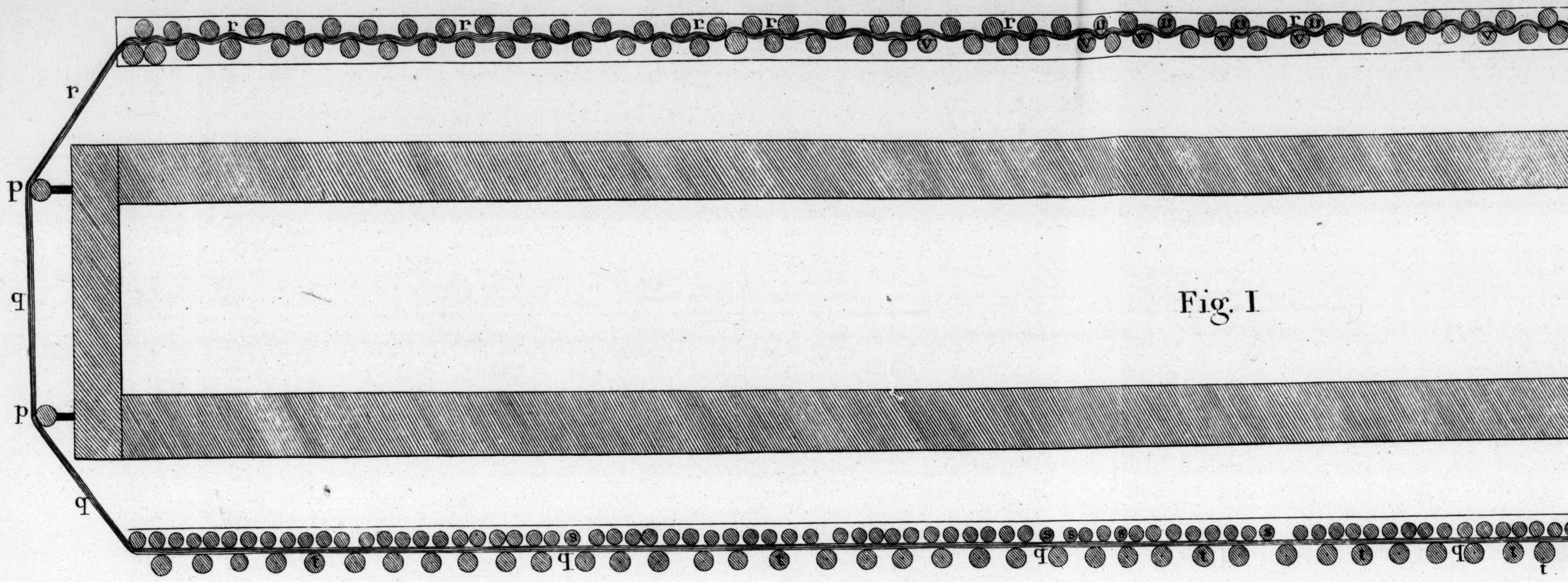


Fig. I

Fig. III

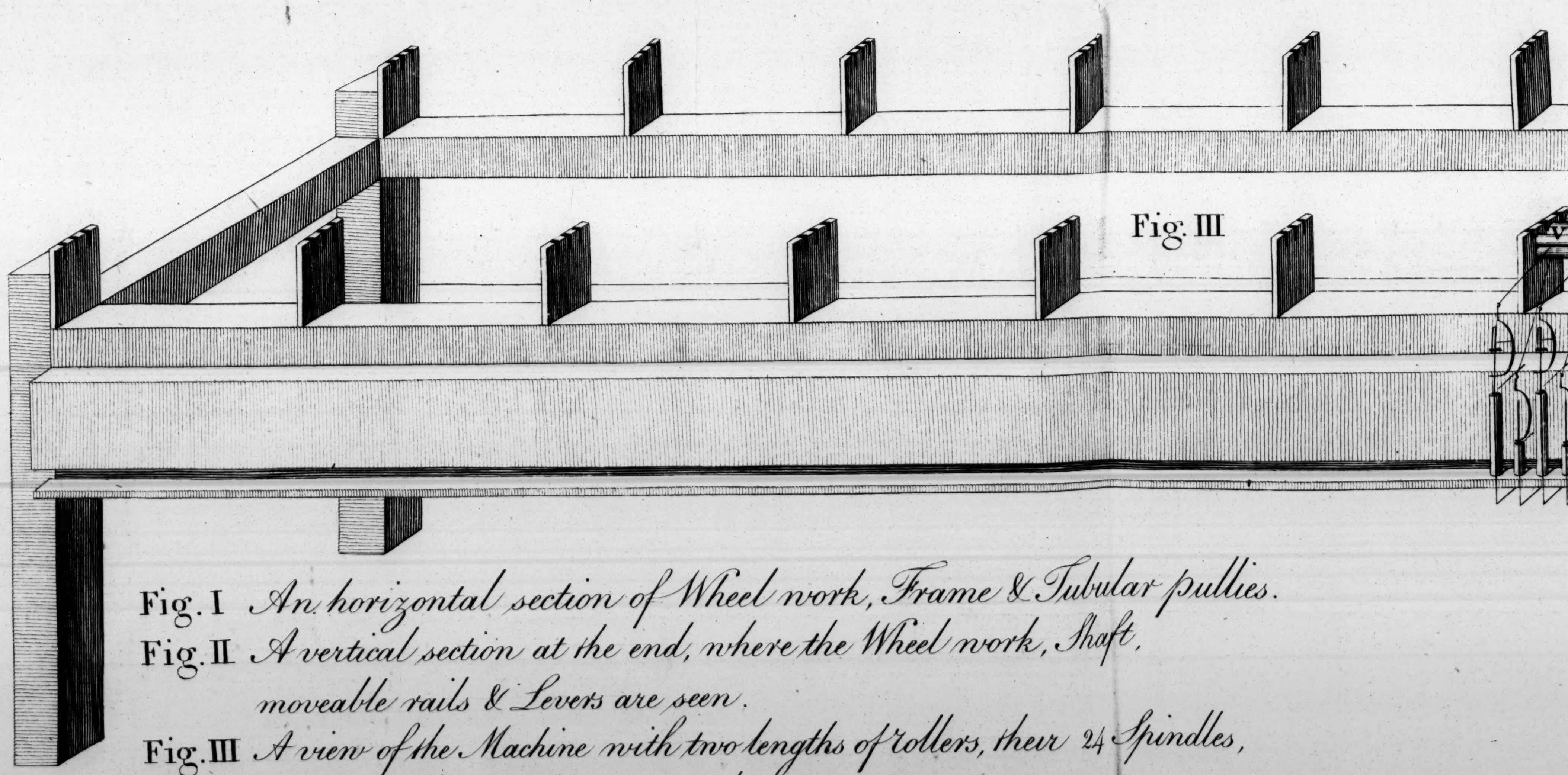


Fig. I *An horizontal section of Wheel work, Frame & Tubular pullies.*

Fig. II *A vertical section at the end, where the Wheel work, Shaft,*
*moveable rails & Levers are seen.*

Fig. III *A view of the Machine with two lengths of rollers, their 24 Spindles,*
*tubular pullies & wings at work.*

Fig. IV *The spindle, wing, its tubular pulley & bobbin seen seperate & when together.*

Paul Tate.

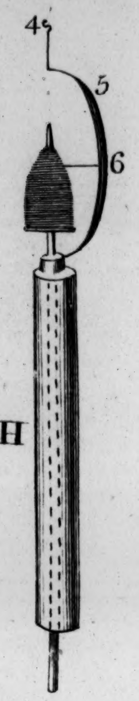
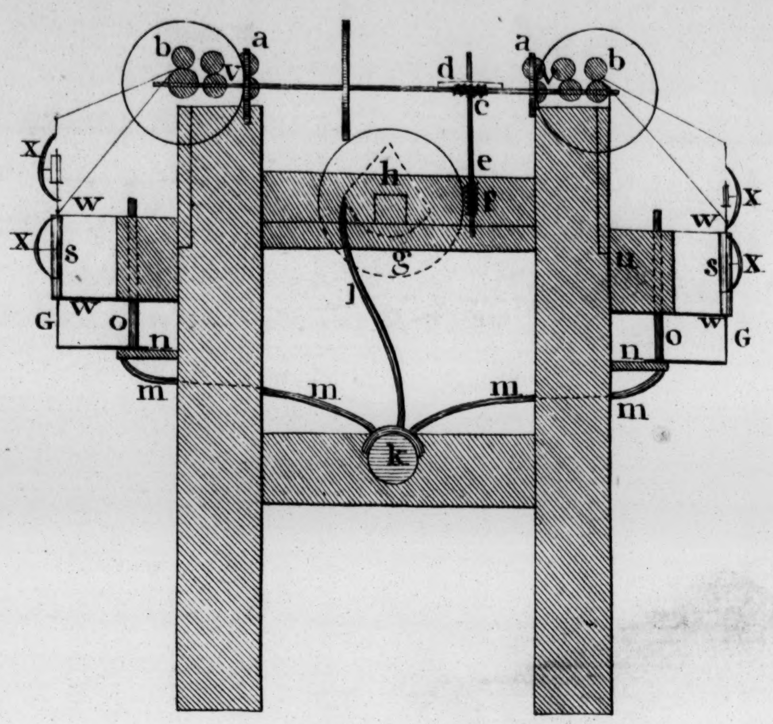
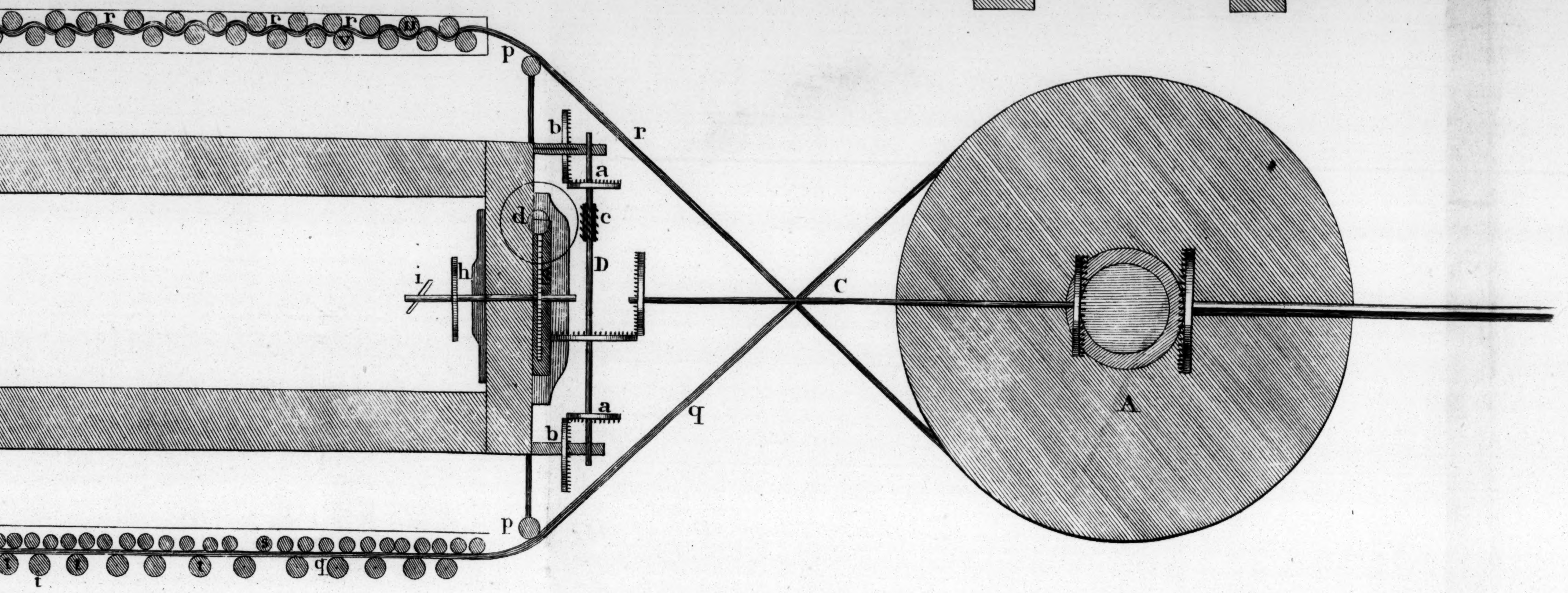
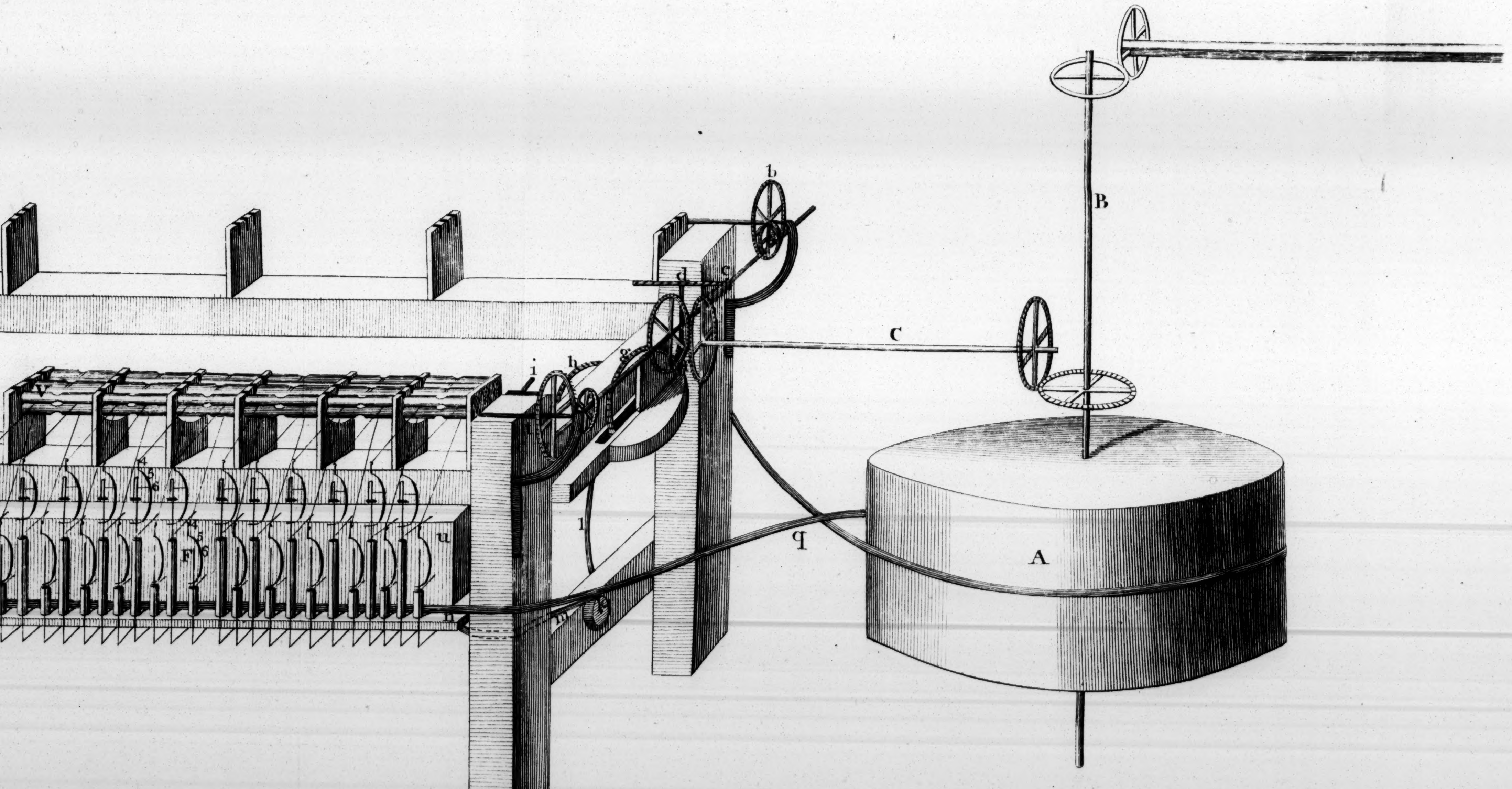


Fig. II







# EXEMPLIFICATION.

## No. V.

## *PAUL TATE.*

TO all to whom theſe Preſents ſhall come, I, **PAUL TATE**, of Mancheſter, in the county palatine of Lancaſter, Cotton Manufacturer, ſend greeting. Whereas his moſt Excellent Majeſty King GEORGE the Third, did by his Letters Patent, under the Great Seal of Great Britain, bearing date at Weſtminſter, the fifteenth day of March, in the thirty-third year of his reign, give and grant unto me, the ſaid Paul Tate, his eſpecial licence, that I, the ſaid Paul Tate, during the term of years therein mentioned, ſhould, and lawfully might uſe, exerciſe and vend within England, Wales, and the town of Berwick upon Tweed, my invention of a Spinning Machine, on a new conſtruction, whereby the proceſs of ſpinning is much facilitated and expedited; in which ſaid Letters Patent there is contained a proviſo, obliging me, the ſaid Paul Tate, by an inſtrument in writing under my hand and ſeal, to cauſe a particular deſcription of the nature of my ſaid invention, and in what manner the ſame is to be performed, to be inrolled in his Majeſty's High Court of Chancery, within four calendar months after the date of the ſaid recited Letters Patent, as in and by the ſame (relation being thereunto had) may more fully and at large appear.

NOW KNOW YE, that in compliance with the ſaid proviſo, I, the ſaid Paul Tate, do hereby declare that my ſaid invention is deſcribed in the plan hereunto annexed, and the deſcription thereof following:

A, main drum or cylinder; B drum or cylinder ſhaſt; C the ſhaft which turns the ſmall horizontal ſhaft D; *a a* the two wheels work the two face wheels *b b*; *c* the worm which works the horizontal wheel *d*; *e* the perpendicular axle of the horizontal wheel *d*, and the worm *f* and *e*; *f* the worm which turns the vertical wheel *g*; *h* the egg ſhaped plate fixed on the axis of the vertical wheel *g*; *i* the inclined plate which works into a notch in the ſpinning board, which it moves gently backwards and forwards betwixt the two beams which ſupport the ſtands. The drawing of the ſpinning board is left out to prevent confuſion. *k*, an end view of the long ſhaft which runs through the center of the frame. *Fig.* 3, L, the lever bearing againſt the plate *h*; *m m* the arms of the ſhaft *k* which lifts the rails *n n*; *o o* the pin which runs through the beams *w w* to ſteady the motion of the rails *n n*; G G the axis of the bobbin moving through the pullies *s*; *w w w w* ſteps for the tubular pullies to run in; *v v* the rollers with threads coming from them; *x x x x* two ranges of wings with the tubular pullies fixed as when at work; *p p p p* ſmall pullies to conduct the ſtrap round the ends of the frame; *q* the ſtrap as it runs with the wings of the tubular pullies upright; *r* the ſtrap running in its vermicular direction with one half of the pullies inverted; (*t*) ſmall trucks bearing upon the ſtraps at *q*. *Fig.* 4, G, the axis of the bobbin 1, with its tin 2, and ſhoulder 3. F, the ſmall tubular pulley with its wing. E, the large tubular pulley with its wing. H, the tubular pulley with its wing and axis of the bobbin with the thread coming upon it. I, ſtands which the rollers run in.

*Fig.* 3 is thirteen feet long, and when compleat, ſpins ninety-ſix threads on each ſide of the frame. The dotted lines in the pullies ſhow the hollow for the axis of the bobbin to move through the pinions at the rollers ends. Caps, ſaddles, ſtands, creel for the rovings, hooks, weights, and levers for the rollers are omitted, to prevent confuſion, for the ſame reaſons, in *fig.* 3. The trucks which bear the ſtraps againſt the tubular pullies are left out. The ————, or new improved ſpinning machine, is worked by one principal drum, in the ſame way as what are uſually called water frames; from the drum or main cylinder A, the ſtrap *q r* glides, which turns the tubular pullies (*s*) in *fig.* 1 and 3, with their wings upright. The trucks (*t*) have a ſmall preſſure upon the belt at *q*, in order to bring it to a proper bearing to turn the tubular pullies (*s*) and *v*; in *fig.* 1 are the tubular pullies with the ſtrap at *r* running in a vermicular direction, and by the pullies (*v*) being inverted the twiſt of the ſpun thread will be given the ſame way, and do away the neceſſity of trucks; yet the plan as deſcribed in *fig.* 1, at (*t*), is preferable. There are two lengths of rollers coupled together in *fig.* 3, which when compleat, the whole of the rollers in each ſide of the frame will be joined, and are worked from the main ſhaft B, which turns the ſhaft C, and works the ſmall horizontal ſhaft D, ſee *fig.* 1, on which the two wheels *a a* work the two face wheels on the roller ends *b b*, ſee *fig.* 1 and 3. On the horizontal ſhaft D is worm *c*, which works into the wheel *d*, on the perpendicular axle of which the worm *f* turns the vertical wheel *g*, on whoſe axis is placed an egg ſhaped plate *h*, which in its revolutions gives an oſcillatory vibration to the axis *k*, by means of the lever *l* conſtantly bearing upon it. To the ſame axis are applied the arms *m m*, ſupporting the moveable rail *n n*, which are alternately raiſed each vibration of the axis *k*, the axis G of the bobbin in the mean time moving eaſily up and down through the tubular pullies *s*, gives that motion neceſſary to wind the thread with exactneſs upon the bobbin, (which amongſt ſpinners is termed the copping part). In *fig.* 2, the pullies belonging to the two rows of wings turn in narrow ſteps *w w w w*, and are ſcrewed to the top and bottom of thick beam *u*. The thread runs from the mouth of the rollers through the wire 4, down the groove 5, through the notch 6, to the bobbin; ſee *fig.* 2, 3, and 4 at H, on a larger ſcale. No. 2, in *fig.* 4, is a piece of tin placed upon the bottom of the bobbin 1, ſo that the twiſt or ſpun thread may be ſlipped off the bobbin when full, in which caſe a great part of the expence and trouble will be avoided, conſequent on the change and tempering of bobbins. The firſt object on which this patent is grounded is in ſpinning two rows of thread on each ſide of the machine; the ſecond is, that the axis of the bobbin, when applied in either ſingle or double rows, has no rotary motion.

In witneſs whereof, I, the ſaid Paul Tate have hereunto ſet my hand and ſeal, this eleventh day of June, in the year of our Lord one thouſand ſeven hundred and ninety-three.

PAUL TATE (L. S.)

---

AND BE IT REMEMBERED, That on the ſame eleventh day of June, in the year above mentioned, the aforeſaid Paul Tate came before our Lord the King, in his Chancery, and acknowledged the ſpecification aforeſaid, and all and every thing therein contained in form above written, and alſo the ſpecification aforeſaid was ſtamped according to the tenor of the ſtatute in that caſe made and provided.

Inrolled the twelfth day of July, in the year above written.

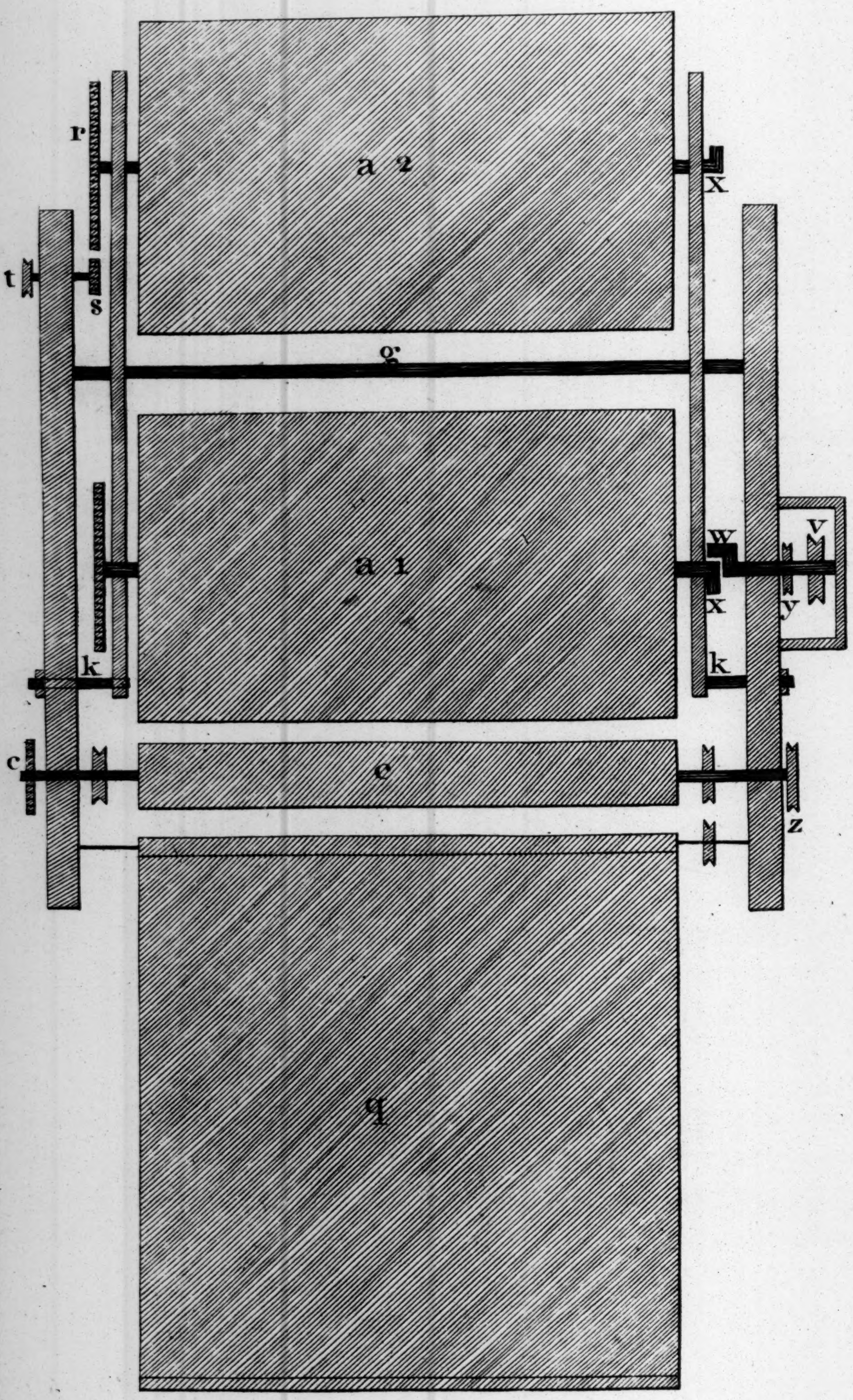
W. GRAVES.

*Examined with the Record in the Office of Petty Bag, in the Court of Chancery, this 5th day of January, 1796.*

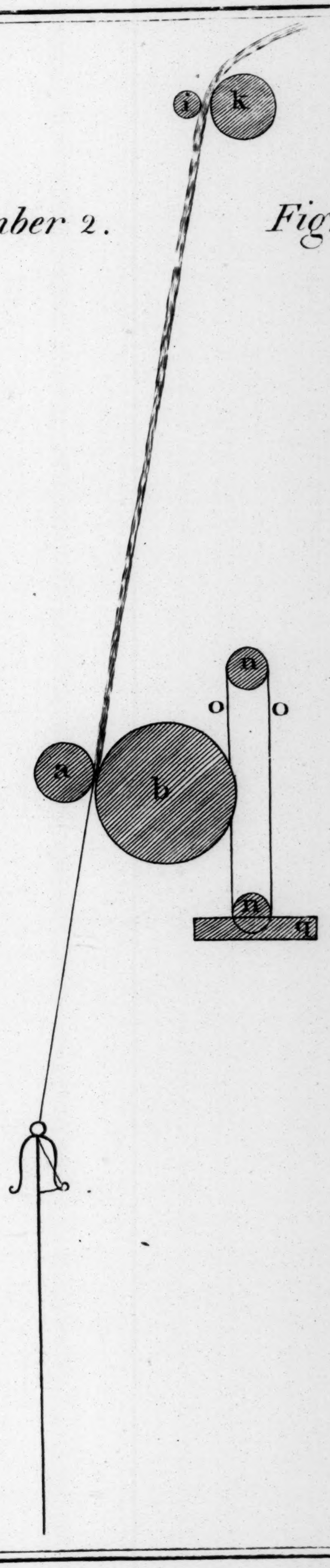
P. PARRY.

BRITISH MUSEUM
30 APR 70

Number 1. Fig. 2.



Number 2. Fig. 2.



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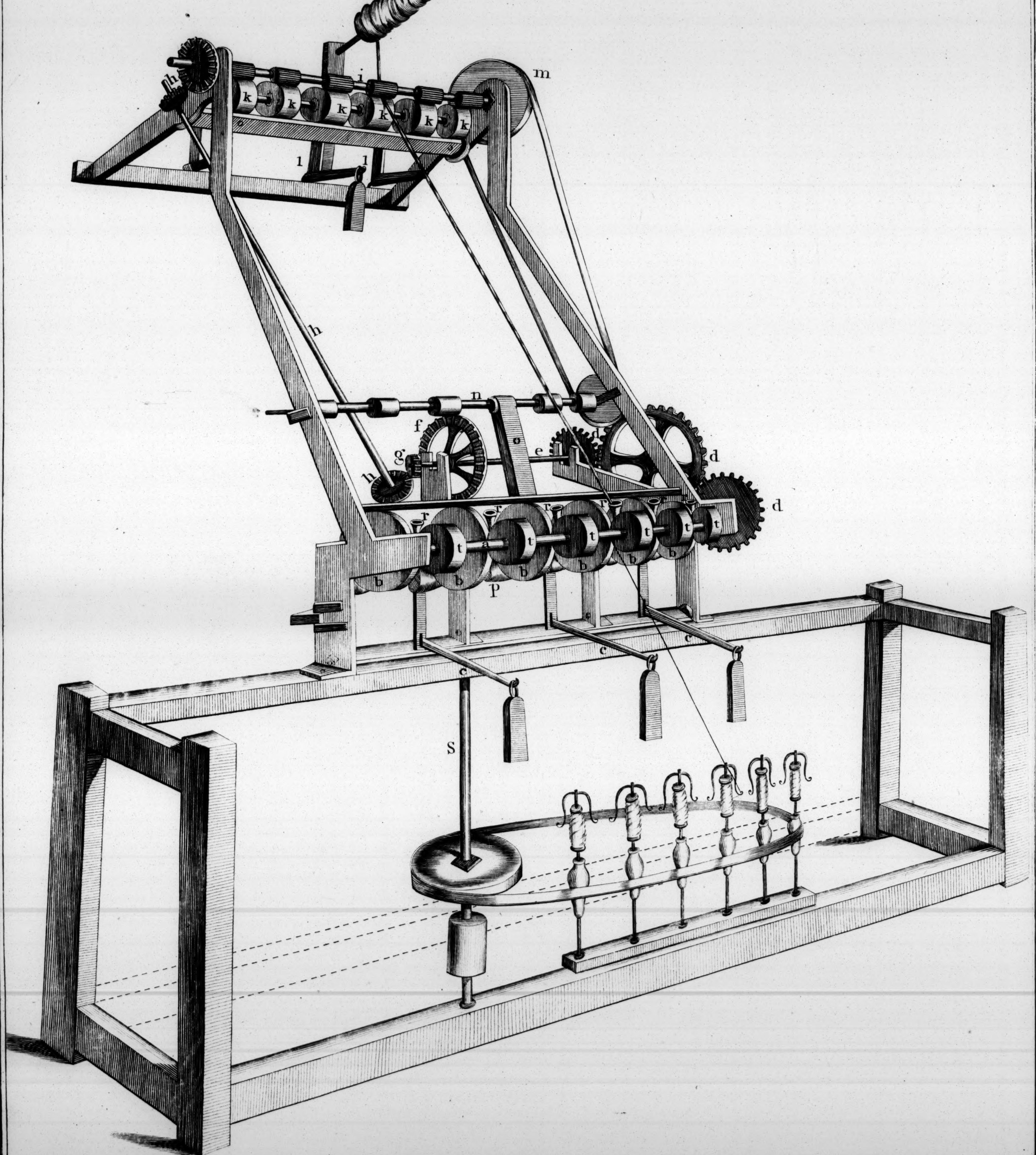
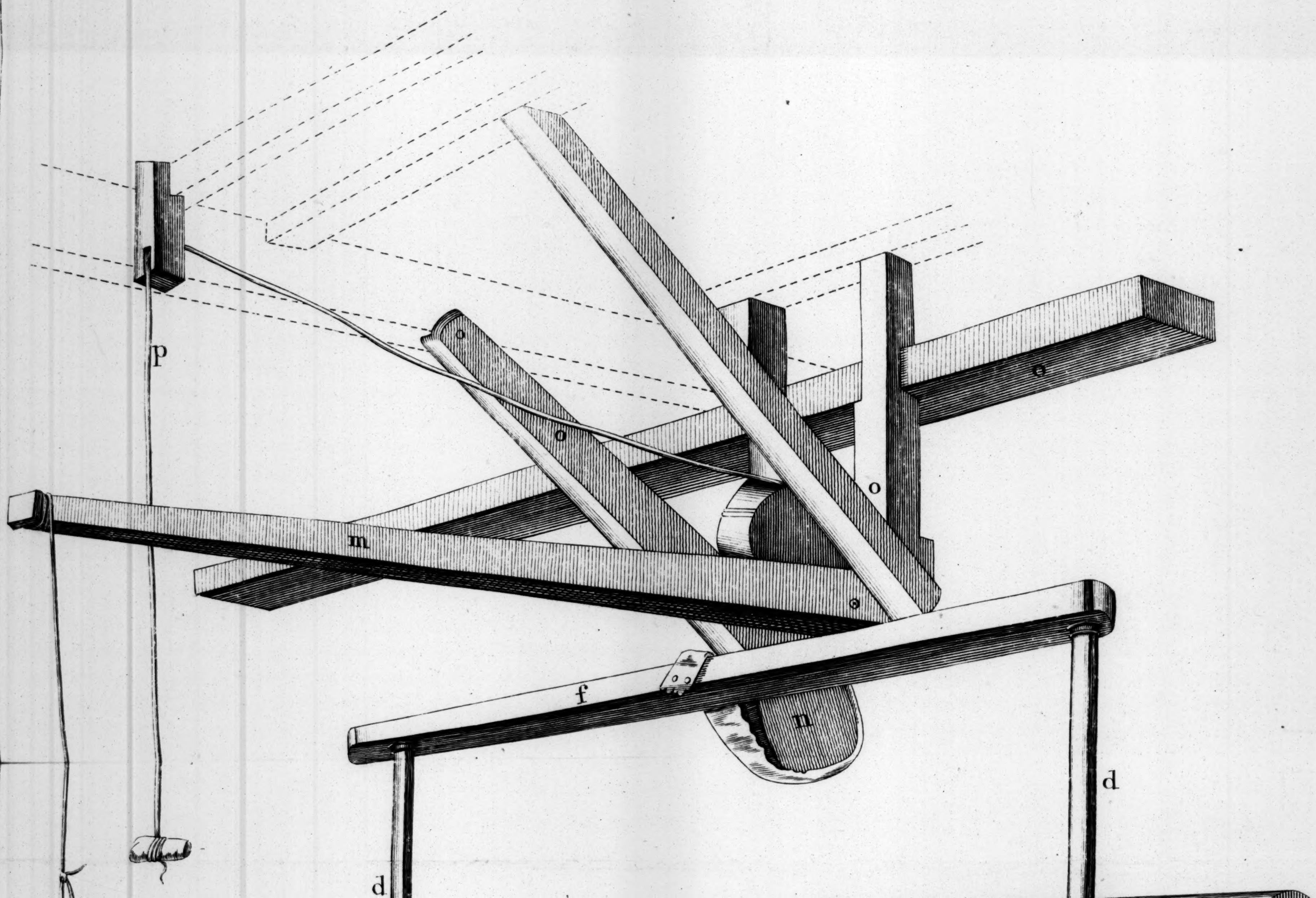
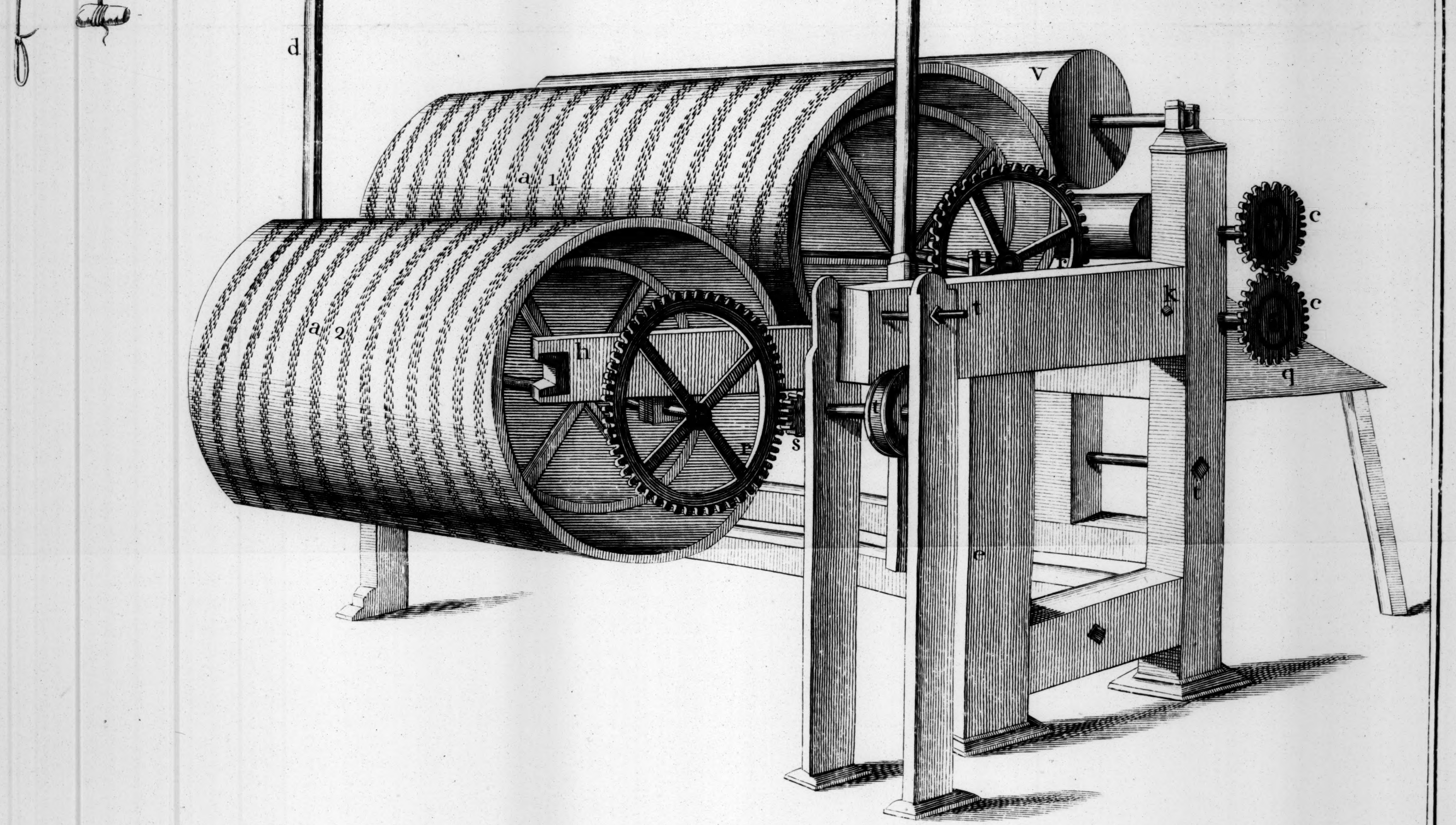
*Number 2, Fig: 1.*



Number 1, Fig: 1.




d
V
a 1
a 2
h
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k
e
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c
q

# EXEMPLIFICATION.

## No. VI.

## *MATHEW MURRAY.*

### OF HOLBECK.

TO all to whom theſe Preſents ſhall come, I, MATHEW MURRAY, of Holbeck, in the pariſh of Leeds, in the county of York, White-ſmith and Mechanic, ſend greeting:— Whereas his preſent Majeſty King GEORGE the Third, by his Letters Patent under the Great Seal of Great Britain, bearing date at Weſtminſter, the eighteenth day of December now laſt paſt, hath given and granted unto me, the ſaid Mathew Murray, my executors, adminiſtrators, and aſſigns, ſpecial licenſe, full power, ſole privilege and authority to make, uſe, exerciſe, and vend, within England, Wales, and the town of Berwick upon Tweed, during the terms of years therein expreſſed, my invention of certain inſtruments and machines for preparing and ſpinning of flax, hemp, tow, wool, and ſilk, in which ſaid Letters Patent there is contained a proviſo, obliging me, the ſaid Mathew Murray, by an inſtrument in writing, under my hand and ſeal, to cauſe a particular deſcription of the nature of my ſaid invention, and in what manner the ſame is to be performed, to be inrolled in his Majeſty's High Court of Chancery, within one calendar month next after the date of the ſaid recited Letters Patent, as in and by the ſame (relation being thereunto had) may more fully and at large appear.

NOW KNOW YE, that I, the ſaid Mathew Murray, in compliance with the ſaid proviſo, do hereby declare, that the nature of my ſaid invention, and the manner in which the ſame is to be performed, is particularly deſcribed and aſcertained in the reſpective plans hereunto annexed, and the following deſcription thereof, (that is to ſay):

No. 1, is a Carding Engine, of which *fig.* 1 is a perſpective view, and *fig.* 2 a ground plan. —The ſame letters refer to the ſame parts in each.—*a a* are two cylinders, round each of which is wound a fillet card in ſpires at about an inch diſtance from each other. The roller

V is covered with plain cards, and works againſt the cylinder *a*, and is doffed by the feeding rollers *c c*; *d d* are two iron ſtandards, moveable on the pins *e*, and connected by the rail *f*; *g* is an iron axis, to which are fixed the inner rails *h h*, which ſupport the cylinders *a a*; pivots of the axis *g*, move in the iron ſtandards *d d*; at each end of the inner rails *h h* is a notch *i*, which ſlides on to the two iron pins *k k*, fixed to the main framing *l*; *m* is a lever, on the axis of which is fixed the curve *n*, which is connected by a ſtrap to the rail *f*; *o*, *oo* are fixtures for the lever *m*; *p* is a cord which takes hold of a catch that falls into a notch in the curve *n*. The engine receives its motion from the mill by the pulley V, on the axis of which is fixed a crank W, which by the finger X turns the cylinder *a*; the ſmall pulley Y, gives motion to the feeders by the pulley Z. Motion is given from the feeders to the feeding ſhut roller, and to the working roller *b* by pullies, and from one feeding roller to the other by the wheels ſhewn at the end of their axles. The engine being put in motion, a proper weight of the material to be carded is ſpread upon the feeding ſheet *q*, and paſſes through the feeding rollers *c c*, on to the cylinder *a* 1. The machine is then ſtopped, and the card *p* is pulled to diſcharge the catch, which allows the cylinders on their frame *h h* to ſlide forwards off the pins *k k*. The cylinders are then turned over, and change places, and the lever *m* is pulled down, which draws the cylinders and their frame to their former poſition, in which they are held by the pins *k*, in the notches *i*. The cylinder *a* 2, is then ſet to work, as before, and the material upon the cylinder *a*, is taken off from the whole length of the fillet into a can, for which purpoſe a circular motion is given to the cylinder by the wheel and pinion *r s*. The pinion S, by the pulley *t*, receives its motion from the mill.

No. 2, is a Spinning Machine, of which *fig.* 1 is a perſpective, and *fig.* 2 a ſide view. The ſame letters refer to the ſame parts in each. *a* is an iron roller, upon which are ſix boſſes *t*, made of braſs, or any other material which corrodes the leaſt with moiſture.— Againſt theſe the wood rollers *b b* are preſſed by the weighted levers *c c*. The three wheels *d d d* connect the roller *a* with the back axis *e*, which by its contrate wheel *f*, receives its motion from a pinion on the top of the liſt pulley ſhaft S. The pinion *g* on the axis *e*, by the wheels and diagonal ſhaft *h h h* gives motion to the iron roller *i*, againſt which the wood rollers *k k* are preſſed by the weighted levers *l l*. On the end of the roller *i* is a pulley *m*, which conveys the motion to the wood roller *n*; the liſts *o o* paſs round the roller *n*, and lower roller *p*, and rub againſt the back of the roller *b*. The roller *p* runs in a trough *q*, filled with water, or any other liquid.

N. B. Some of the liſts and weighted levers are not ſhewn in the plan to prevent confuſion, motion being given to the liſt pulley ſhaft S, and ſpindles, as is uſual in ſpinning mills. The roving is introduced between the rollers *i k*, and then paſſing through the circular guides *r*, is drawn out by the rollers *a b* to a proper ſize, and is twiſted into a thread by the ſpindle as uſual. The liſt *o*, revolving by the motion it receives from the roller *n*, brings up a certain quantity of liquid from the trough *q*, which it depoſits on the outer edge of the roller *b*, which wets the untwined ſubſtance of the thread in the point of paſſing between the rollers *a* and *b*.

In witneſs whereof, I, the ſaid Mathew Murray, have hereunto ſet my hand and ſeal, this eleventh day of January, in the thirty-fourth year of the reign of King George the Third, and in the year of our Lord one thouſand ſeven hundred and ninety-four.

MATHEW MURRAY, (L. S.)

AND BE IT REMEMBERED, That on the thirteenth day of January, in the year above mentioned, the aforeſaid Mathew Murray came before our Lord the King, in his Chancery, and acknowledged the ſpecification aforeſaid, and all and every thing therein contained, in form above written, and alſo the ſpecification aforeſaid was ſtamped according to the tenor of the ſtatute in that caſe made and provided.

Inrolled the fifteenth day of January, in the year above written.

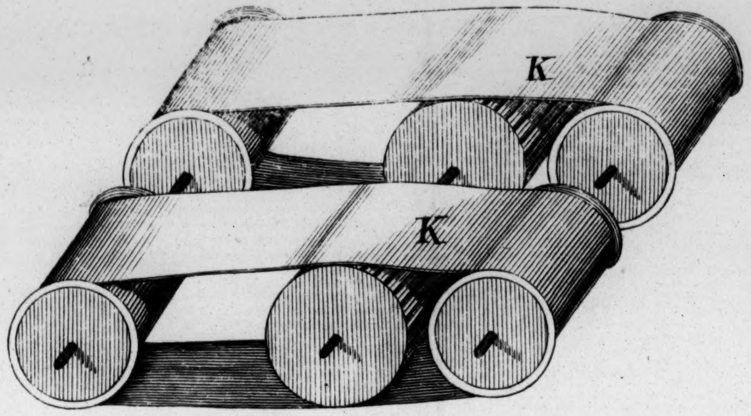
JAMES RICHARDSON,
A Maſter extraordinary of his Majeſty's High Court of Chancery.

*Examined with the Record in the Office of Petty Bag, in the Court of Chancery, this 5th day of January, 1796.*

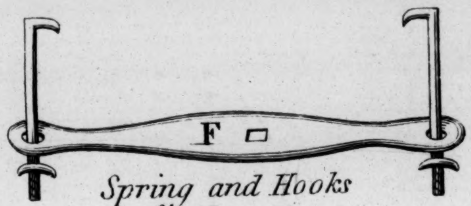
P. PARRY.

BRITISH MUSEUM 30 APR 70

## Plan N.º 7



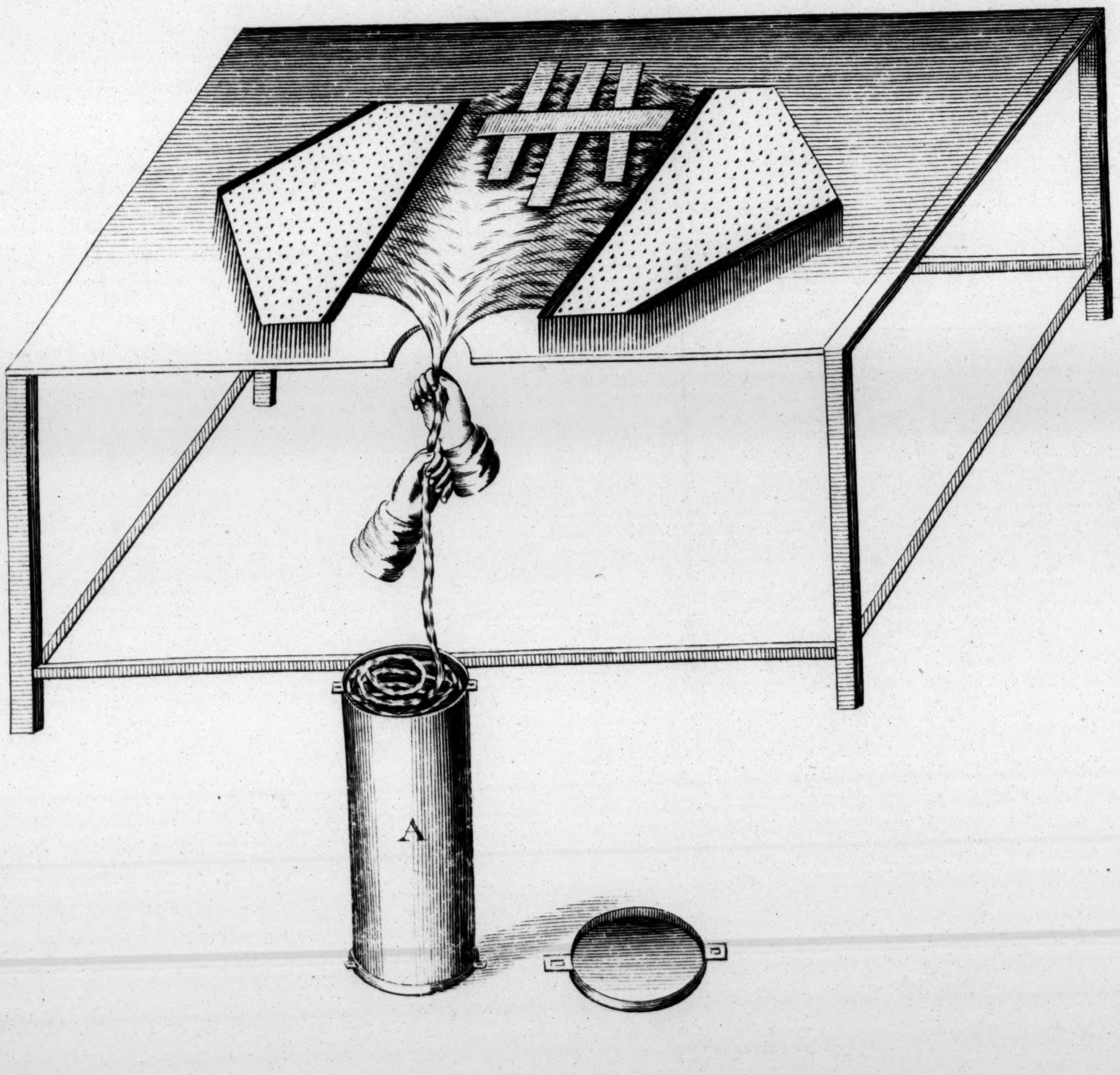
## Plan N.º 3

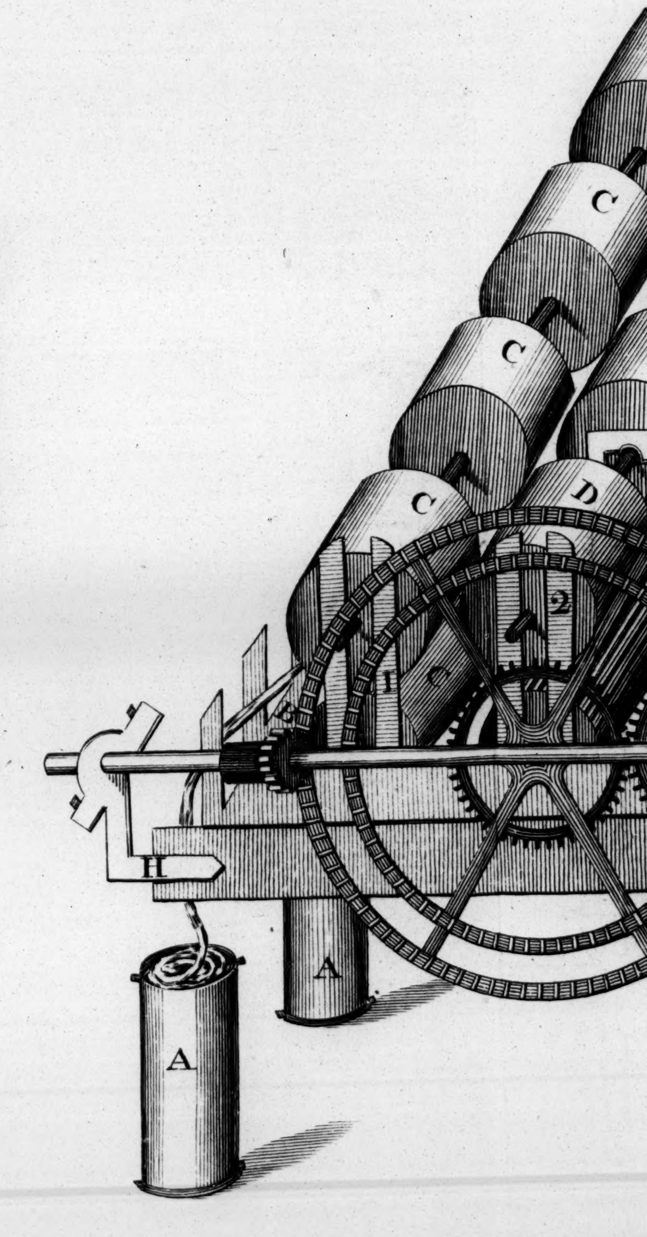


*Spring and Hooks fixed at* E.

*Sa*

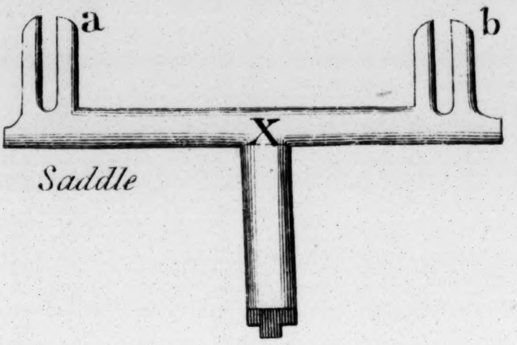
## Plan N.º 1



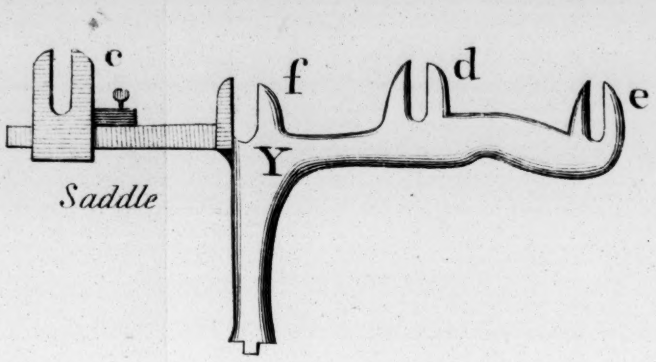


ellars and Peter Standage .

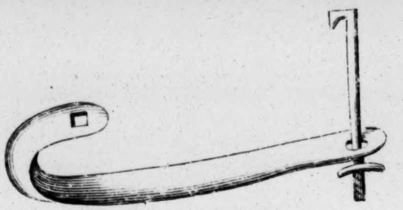
Plan N°.4



Plan N°.5

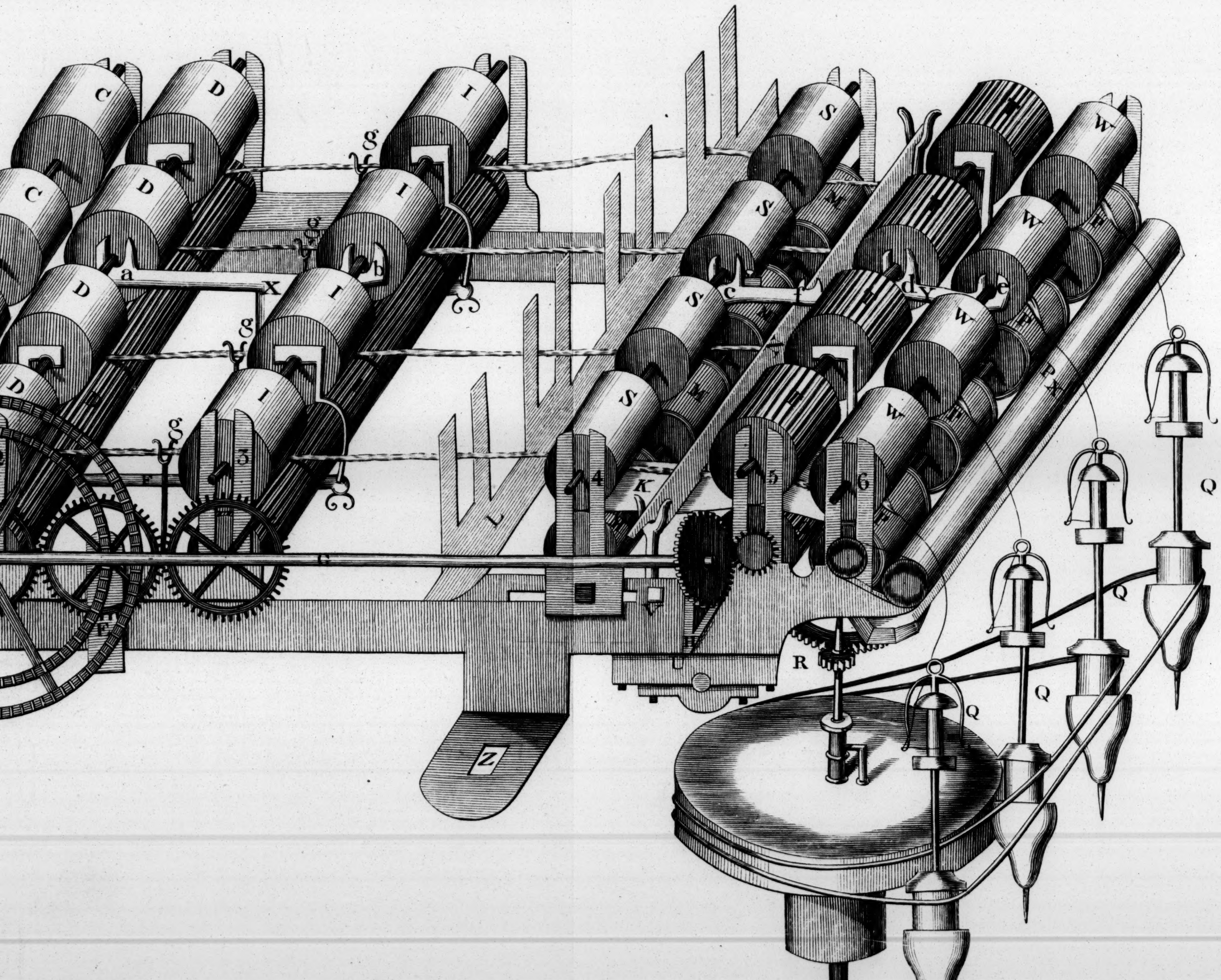


Plan N°.6



*Spring and Hook fixed at V.*

Plan N°.2



# EXEMPLIFICATION.

## No. VII.

## *WILLIAM SELLARS* AND *PETER STANDAGE.*

TO all to whom theſe Preſents ſhall come, We WILLIAM SELLARS and PETER STANDAGE, both of Bridgenorth, in the county of Salop, Manufacturers of Spining Machines, and Copartners, ſend greeting. WHEREAS his Moſt Excellent Majeſty King GEORGE the Third, by his Royal Letters Patent, under the Great Seal of Great Britain, bearing date at Weſtminſter, the nineteenth day of January, in the thirty-fifth year of his reign, did give and grant unto us the ſaid William Sellars and Peter Standage, our executors, adminiſtrators and aſſigns, his eſpecial licence, full power, ſole privilege and authority, that we the ſaid William Sellars and Peter Standage, our executors, adminiſtrators and aſſigns, during the term of years therein expreſſed, ſhould and lawfully might make, uſe, exerciſe and vend within that part of Great Britain called England, the dominion of Wales, and Town of Berwick upon Tweed, our invention of an intire new improvement in the preparing and ſpinning of flax, hemp, tow, and ſeveral other things by hackles and machines, and which machines may be worked or uſed by water, ſteam, or horſe mills, or by any other moving power; and ſuch improvement will, as we the ſaid William Sellars and Peter Standage conceive, be of great public utility in the manufacturing of linen, ſail cloth, cordage, and ſeveral other things; in which ſaid Letters Patent is contained a proviſo, obliging us the ſaid William Sellars and Peter Standage particularly to deſcribe and aſcertain the nature of our ſaid Invention, and in what manner the ſame is to be performed, by an inſtrument in writing under our hands and ſeals, and to cauſe the ſame to be inrolled in his Majeſty's High Court of Chancery within one calendar month next and immediately after the date of the ſaid Letters Patent, as by the ſaid Letters Patent, reference being thereunto had, may more fully appear.

NOW KNOW YE, that in compliance with the ſaid proviſo, we the ſaid William Sellars and Peter Standage do hereby declare that the nature of our ſaid invention, and in what manner the ſame is to be performed, is particularly deſcribed and aſcertained in the ſeveral plans or drawings hereunto annexed, and in the explanation or deſcription of ſuch plans or drawings herein after mentioned, and referring thereto, that is to ſay: on a table (as in the plan No. 1) which may have a notch cut in the front four inches wide, and ſix inches deep, or thereabouts, lay one or more ſtrieks of flax, hemp, tow or any other material, in the ſame manner as taken from the perſon who dreſſes it, place an hackle at a ſmall diſtance from each end (on the material), with the points of the teeth downward, then lay three ſmall boards between the hackles, in ſuch a poſition as for one end of each board to preſs lightly on the material, and to keep them ſteady; let another board be laid acroſs theſe three, then with the hand begin at the edge of the ſtriek to draw from the middle of the ſtaple, taking a larger or ſmaller quantity according to the ſize of the thread to be ſpun, preſſing the ſliver or drawing together through both hands, and let it fall lightly (without being twiſted) into a tin or iron can, about nine inches wide and thirty one inches deep, the ends moveable, as when the can is full it muſt have a cover put on, and be turned with the bottom upwards, ſo as to begin to ſpin with that end of the ſliver which was firſt drawn. A is a can, which being reverſed after it is filled with the ſliver or drawing, is placed on the floor at the back of the ſpinning machine; the beginning of the ſliver or drawing is paſſed between guides marked B (as in the plan No. 2), to a pair of ſmooth rollers of wood or other fit material marked C, of two inches diameter each, or thereabouts, which are ſupported in their places by their axis turning in a ſlot marked with the *figure* 1. The ſliver or drawing is then carried to the pair of rollers marked D in the ſlot marked with the *figure* 2, the under one of metal fluted, one inch diameter, or thereabouts, the upper one of wood or other fit material, covered with cloth and leather, two inches diameter, or thereabouts, which is preſſed on the under roller by a ſpring marked F, drawing a hook (as in the plan No. 3) placed on the center of the axis of the upper roller, which ſpring is ſcrewed to the ſaddle bar that lies acroſs under the frame at E, (or this preſſure may be effected by weights); from hence the ſliver or drawing paſſes between guides marked *g* of wood or metal, to another pair of rollers in the ſlot marked with the *figure* 3, the under one of metal fluted, the upper one of wood or other fit material, covered with cloth and leather, two inches diameter each, or thereabouts, and preſſed on the under one by the other end of the ſpring marked F, ſcrewed to the ſaddle bar at E, drawing a hook placed on the center of the axis of the upper roller. Theſe three pair of rollers are placed in a ſliding carriage on the long frame, fixed in its proper place, by ſcrewing the ſaddle bar at E. The uſe of having it moveable is to accommodate the different lengths of flax, hemp, tow, or other material. By this mode it is fit for any length; from hence the ſliver or drawing paſſes between other guides marked L, to another pair of rollers of wood or other fit material, marked M and S, of two inches and three quarters diameter each, or thereabouts, in ſlot marked with the *figure* 4, which with the ſlot *c* in ſaddle Y are made to ſlide, for the purpoſe of ſtraining a leather ſtrap marked K (as in the plan No. 7), and are fixed by ſcrews and nuts, (the under roller M is flanged to keep the leather ſtrap that revolves round it in its proper place, and which ſtrap works between the ſaid rollers M and S, and two other pair of rollers marked O T P and W, that marked P being alſo flanged ;) from hence the ſliver or drawing paſſes the aperture of a guide marked N, made of wood or metal, and under a ſmall roller of wood or metal that lies looſe on the leather ſtrap, and ſo conducted between the fluted metal rollers O and T, in the ſlot marked with the *figure* 5, which are three inches and an half diameter each, or thereabouts, the upper roller being preſſed on the lower roller by a ſpring, drawing, or hook (as in the plan No. 6) placed on the center of the axis of the roller T, which ſpring is ſcrewed to the front ſaddle bar at V, from hence it paſſes between the other pair of rollers of wood or other fit material, marked P and W in the ſlot marked with the *figure* 6, which are two inches and three quarters diameter each, or thereabouts, from hence the ſliver or drawing is conveyed over a roller marked P X (which revolves in a trough of water or ſize) to the ſpindle marked Q, where it is twiſted and delivered on the bobbin by a flyer.

Motion is given to the machine by the following means: under the front, in the center, is an upright ſhaft marked R, with a pinion wheel of twelve teeth, or thereabouts, ſcrewed on the top, which works into a face wheel of thirty teeth, or thereabouts, (or of ſuch other number of teeth as may be moſt convenient), placed near the center of a lie ſhaft fixed acroſs under the front of the frame at U; on the farther end of this ſhaft is a ſpur wheel of fifteen teeth, or thereabouts, working in another ſpur wheel of forty eight teeth, or thereabouts, on the further end of the axis of the under metal roller O; on this end of the axis a pinion wheel of ten or twelve teeth, or thereabouts, works in a contrate wheel of thirty four teeth, or thereabouts, placed on the end of an horizontal ſhaft marked G, ſupported by two brackets marked H & H, which are fixed in the ſide of the frame; on this ſhaft (which is of turned iron, or other fit material) is a pinion of twelve or fourteen teeth, or thereabouts, fixed on the ſhaft by a ſcrew, and gives action to a contrate wheel of ſeventy two teeth, or thereabouts, placed on the axis of the metal fluted roller marked D. This wheel has two or more circles of teeth (for the purpoſe of encreaſing or diminiſhing the draft of the ſliver or drawing), either of which circles of teeth may be uſed by ſhifting the pinion on the horizontal ſhaft G; on the inſide of this wheel, on the ſame axis, is a ſpur wheel of twenty four teeth, or thereabouts, which works in an intermediate wheel of thirty eight teeth, or thereabouts, placed on the ſide of the frame, for the purpoſe of giving motion to another ſpur wheel of twenty four teeth, or thereabouts, fixed on the axis of the metal fluted roller marked I. The wood roller P X working in the trough of water or ſize, has its motion by a pulley and belt, which communicates with another pulley fixed on the axis of the roller P. The rollers D and I may be worked with two face wheels, by placing another pinion on the horizontal ſhaft, and removing the two twenty four teeth ſpur wheels and the intermediate wheel of thirty eight teeth. All the upper rollers (except C) may be in two parts & ſupported in the middle by ſaddles. The upper rollers marked D and I to be ſupported by the ſlots *a* and *b*, in the ſaddle X, fixed in the bar at E. The other three upper rollers marked S T and W, ſupported by the ſlots *c d* and *e*, in the ſaddle Y, fixed in the bar at V, the ſlot *f* being a ſupport for the guide N that bears on the leather ſtrap, to contract the ſliver or drawing. By ſlackening the ſcrews in the ſlots Z, in the feet of the frame, the machine may be moved ſideways, and thereby prevent the ſhaft R from being thrown out of its perpendicular, ſhould the ſize of the pinion on its top be altered.

The following particulars are the peculiar objects of the ſaid Letters Patent, as being entirely our own proper invention. Firſt, the forming the ſliver or drawing from the middle of the ſtaple, and without twiſting, as before deſcribed. Secondly, the reverſing the can in which the ſliver or drawing is laid, in order to begin with the end of the ſliver or drawing firſt formed, as before alſo deſcribed. Thirdly, the uſing in this kind of machine the leather ſtrap which revolves round the rollers M, O and P; and fourthly, the uſing of the large contrate wheel with two or more circles of teeth, as before alſo deſcribed, and which is intirely new in its application to this kind of machine. As to rollers, whether plain or fluted, they are in moſt machines, but theſe differ in proportion and diſtance.

In witneſs whereof we the ſaid William Sellars and Peter Standage have hereunto ſet our hands and ſeals, this thirteenth day of February, in the year of our Lord one thouſand ſeven hundred and ninety-five.

WILLIAM SELLARS, (L. S.)
PETER STANDAGE, (L. S.)

*Signed and Sealed, by the within named*
WILLIAM SELLARS,
*(being firſt duly ſtamped) in the preſence of*
CHARLES WILKINSON, of Briſtol.
JAMES GARSED, of Briſtol.

*Signed and Sealed by the within named*
PETER STANDAGE,
*in the preſence of*
M. HARVEY, of Eaſt Retford.
JAMES GARSED, of Briſtol.

**AND BE IT REMEMBERED,** That on the thirteenth day of February the ſaid Peter Standage, and on the ſeventeenth day of February, the ſaid William Sellars, in the year above mentioned, reſpectively came before our Lord the King in his Chancery, and acknowledged the ſpecification aforeſaid, and all and every thing therein contained in form above written, and alſo the ſpecification aforeſaid was ſtamped according to the tenor of the ſtatute in that caſe made and provided.

Inrolled the eighteenth day of February, in the year above mentioned.

THOMAS MORGAN,
A Maſter Extraordinary in Chancery.
T. BATE,
A Maſter Extraordinary in Chancery.

*Examined with the Record in the Office of Petty Bag, in the Court of Chancery, this 5th day of January, 1796.*

F. PARRY.

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